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VOL. VIII.] JANUARY, 1900. [No. 85.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW

PAPHIOPEDILUM TONSUM.

(*See page* 358.)

THE

ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY

VOLUME VIII

1900

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Mo. Bot. Garden
1900

"Another Flora here, of bolder hues,
And richer sweets."

THE ORCHID REVIEW.

VOL. VIII.] *JANUARY*, 1900. [No. 85.

EVENTS OF THE PAST YEAR.

IT is usual at the commencement of a new year to pass in review the more important events of the one just past, and we will commence the present volume in conformity with the time-honoured custom.

THE HYBRIDISATION CONFERENCE.

The event of the season, *par excellence*, was the Hybridisation Conference convened at Chiswick by the Royal Horticultural Society, which, like the Quinquennial Show at Ghent in the preceding year, served to draw together many of the leading horticulturists of the world. The educational value of such international gatherings is often greater than is recognised at the time, and the opportunities they afford for the interchange of ideas and international courtesies have an enlightening influence, that can only make for progress. The immediate effects of this Conference can hardly yet be estimated, for we have only summaries of the various papers, but we have no doubt that the Official Report of the Conference, when it appears, will prove a highly interesting and valuable document. Our interest in the matter is necessarily limited to the subject to which these pages are devoted, but Orchidology we know will be well represented.

ORCHIDS OF 1899.

The present year has served to emphasise an opinion which has been gradually gaining ground for some time past, namely, that it is to the hybridist that we must chiefly look in future for that constant succession of novelties which serves to stimulate and increase our interest in this fascinating group of plants. Most countries of the world have been visited

by the collector in search of novelties, and the likelihood of the discovery of new species of Orchids of great horticultural merit is gradually becoming more remote, and those known to science but not yet introduced to gardens are chiefly such as are usually known as botanical Orchids. Dendrobium spectabile, however, must be classed as an exception, for it was accorded a First-class Certificate by the Royal Horticultural Society at its last meeting of the year, when exhibited by Major Joicey.

It has been known to science for upwards of half-a-century, and now that Messrs. Sander have introduced it in quantity we may hope to become more familiar with it. At the previous meeting of the R.H.S. Messrs. F. Sander & Co. exhibited Dendrobium Hodgkinsoni (Rolfe), a distinct species allied to D. atroviolaceum, which they introduced from New Guinea, together with D. spectabile, and which had previously flowered with Dr. Hodgkinson, The Grange, Wilmslow, after whom it was named. Another event of great interest was the re-introduction in quantity of the rare Lælia Jongheana, by Messrs. F. Sander & Co., though the identity of the plant only seems to have been discovered when a flower was produced in the collection of Mr. A. J. Keeling, of Bingley. Among varieties of well-known species, novelties have been numerous, at all events so far as names are concerned, but they are mostly named without reference to those which have previously appeared, or which exist in other collections, so that it is impossible to say how many of them are really new. They add greatly to the interest of our collections, but the way in which they are named and recorded leaves much to be desired if any attempt is to be made to recognise them in future.

Progress of Hybridisation.

But if the introduction of new species is falling off, the energies of the horticulturist are only being diverted into fresh channels, for the rate of progress is being maintained, and even accelerated, by the flowering of the large number of hybrid seedlings which have been raised of recent years. Indeed the progress in this department is so rapid that it is almost impossible to keep in touch with all that is going on. Almost every meeting at the Drill Hall, and at Manchester, witnesses the advent of one or several additions to the list, while on the Continent and in America rapid progress is also being made, the novelties treading on each other's heels in such quick succession that we can hardly keep pace with the records. A few of the more interesting ones may be mentioned here, prominent among them being the following, which have gained the award of a First-class Certificate from the R.H.S.:—Angræcum × Veitchii, Sophrocattleya × Queen Empress, and Cypripedium × Hera Euryades splendens, from Messrs. James Veitch & Sons, Lælio-cattleya × Duvaliana and L.-c. × Imperatrice de Russie, from M. Ch. Maron, Phaius × Phoebe,

from Norman C. Cookson, Esq., Cattleya × Maggie Raphael, from H. S. Leon, Esq., Cypripedium × Hera Euryades from Sir Trevor Lawrence, and Cypripedium × Lord Roberts from Messrs. Charlesworth & Co. Among those to which Awards of Merit were given we may mention the handsome Sophrocattleya × Chamberlainii var. triumphans from the Right Hon. Joseph Chamberlain, M.P., Cattleya × weedoniensis from T. W. Thornton, Esq., Cypripedium × Miss Louisa Fowler from J. Gurney Fowler, Esq., Lælio-cattleya × Martinetii from M. Ch. Maron, Cattleya × elatior from C. L. N. Ingram, Esq., Cypripedium × conco-callosum from G. W. Law-Schofield, Esq., *Zygocolax* × Amesiana from Messrs. Sander & Co., also Cattleya × vestalis, C. × Princess, Lælia × Mrs. M. Gratrix, Lælio-cattleya × Duchess of York, Phalænopsis × Mrs. J. H. Veitch, Cypripedium × Captain Holford, and others from Messrs. James Veitch & Sons. Other interesting hybrids are *Zygobatemannia* × Mastersii from Messrs. Linden, Masdevallia × Hebe from Captain Hincks, Paphiopedilums × Eudymion and × Fortuna from Reginald Young, Esq., P. × Hitchinsiæ from A. S. Hitchins, Esq., Phragmipedilum × Geralda from Mr. W. Rockefeller, Lælio-cattleya × Lucie from E. F. Clarke, Esq., Cypripedium × Mrs. Rehder, from F. A. Rehder, Esq., Lælio-cattleya × bletchleyensis from H. S. Leon, Esq., and indeed many others, which would exhaust our space and our readers' patience to enumerate in detail. Are they not written in our last volume, together with the parentages of those above mentioned!

Natural Hybrids.

Each passing year serves to emphasise the opinion gradually gaining ground, that hybrids are less rare in a wild state than has often been supposed. Lælio-cattleya × Verelii has recently been added to the list, and Dendrobium × Ainsworthii, though not by any means a new plant, has appeared as a natural hybrid during the year, in the collection of W. Thompson, Esq. The flowering of a hybrid between Cattleya intermedia and C. Loddigesii in the collection of T. L. Mead, Esq., has also demonstrated the origin of Cattleya × Claesiana, a matter of some interest.

Exhibitions.

The interest in the meetings of the Royal Horticultural Society and the Manchester and North of England Orchid Society has been well maintained, and in some cases it has been difficult to find accommodation for all the exhibits. Both the Societies are doing good and useful work in popularising and extending the culture of these beautiful plants, but owing to the different system under which awards are given it is difficult to compare them together. The younger society, however, has adopted the principle of judging the exhibits solely upon their individual merits, without

reference to previous awards, and this we think is likely to promote individual excellence, which is no less important than the search after novelty. Meetings abroad have also been well supported, and our readers will remember that even in India a National Orchid Society has been formed with similar objects in view.

Changes.

Many changes have taken place during the past year. No less than four members of the R.H.S. Orchid Committee have been removed by death, Major Mason, Sydney Courtauld, W. H. Protheroe, and Alfred Outram, and in a similar way the Manchester Society has lost one of its promoters and a warm supporter in the late Henry Greenwood, and this has led to the dispersal of three well-known collections. We have also to mourn the loss of James Anderson, Richard Moore, G. Warocqué, F. Canham, and among names perhaps less widely known in the Orchid world, though staunch supporters of the present work, Mrs. W. L. Barclay, of Reigate, and John Riley, J.P., of Burnley. But such losses are inevitable, and their places will doubtless be filled with younger enthusiasts, who will achieve fresh laurels in the culture of these beautiful plants, which we believe are destined to attain still greater popularity than at present. In the achievements of the past we may find plenty of encouragement for the future, and we may conclude with the hope that the coming season may be one of continued progress, and by wishing all our readers

A Happy New Year.

OBITUARY.

W. H. Protheroe.—We regret to hear of the death, on December 2nd last, of Mr. William Henry Protheroe, senior partner in the well known firm of auctioneers and estate agents, Messrs. Protheroe & Morris, of Cheapside. Orchid sales comprise one of the chief branches of the firm's business, and in this connection the deceased was well known to many of our readers. He was also a member of the Orchid Committee of the Royal Horticultural Society, and in both capacities he was widely esteemed, for his geniality of manner was as marked as his business capacity. Mr. Protheroe was born at Leytonstone in 1846, and thus was fifty-three years old at the time of his death, and although he had been in failing health for some time past he may be said to have literally died in harness, for on Nov. 29th and 30th he was officiating at the sale of the late Mr. Sydney Courtauld's Orchids, and the fatal seizure is said to have taken place less than an hour before his death.

ALFRED OUTRAM.—The Orchid Committee of the Royal Horticultural Society has also lost another of its members since our last issue. Mr. Alfred Outram, who died at his residence, in Moore Park Road, S.W., on Friday, December 8th, was a well-known and much respected figure in the horticultural world. He was born at Tooting in 1847, and commenced his career in the famous nursery of Messrs. Rollisson, passing on to Mr. William Cole's nursery, near Manchester, from which he was transferred to Manley Hall, the property of Sam Mendel, Esq., who was the possessor of one of the celebrated Orchid collections of the period, and whose name is commemorated in Cattleya Mendelii. From here he passed to the establishment of Messrs. James Veitch & Sons, then to the late Mr. B. S. Williams, for whom he acted as traveller for twenty-three years, and afterwards to Messrs. Sutton & Sons. He was a warm supporter of the gardening charities, and a frequent contributor to the press. Though he had been in failing health for some time the end came with painful suddenness. The deceased was in the 53rd year of his age.

PAPHIOPEDILUM FAIRRIEANUM AND ITS HYBRIDS.

Is there a more mysterious Orchid in cultivation than Paphiopedilum Fairrieanum? Introduced over forty years ago, and always highly prized, it seems to be rarer to-day than formerly, and there are Orchidists of considerable experience to whom it is known chiefly by repute, and by the published figures. In 1895, Mr. Woodall omitted it from his "Ideal Cypripedium list" because he had "never seen it in flower," though he had been shown small plants of it (*ante*, iii., p. 356). Yet its hybrids are found in almost every collection. And although it was originally recorded as having been sent from Assam, no one has yet succeeded in re-descovering it, though it has long been searched for, and the sum of £1,000 has been offered for an importation of it.

It was described by Dr. Lindley, in October, 1857, as Cypripedium Fairrieanum (*Gard. Chron.*, 1857, p. 740), from a plant which had been exhibited at a recent meeting of the Horticultural Society by Mr. Fairrie, of Aigburth, Liverpool, to whom it was dedicated. In the December following it was figured in the *Botanical Magazine* (t. 5024), from materials sent to Sir William Hooker by Mr. Myland, gardener to Mr. Reid, of Burnham, Somerset, and from a plant sent from the nursery of Mr. Parker, of Holloway. All these plants are believed to have been obtained at a sale held at Stevens' Rooms of some Orchids that had been sent from Assam, and this is partially confirmed by the fact that a Captain Tronson, who was on military service in Assam, sent some plants to the Royal Botanic Garden, Calcutta, which flowered there in 1861. M. Van Houtte, however, states

that he received plants from a correspondent in Bhotan. It is certainly curious that up to the present time nothing further should be known about it, a fact that seems to imply either a very restricted habitat or a remote or inaccessible station, and perhaps both. That it will eventually be re-discovered, like the old Cattleya labiata and Lælia Jongheana, we can scarcely doubt, and there is an opinion among persons well qualified to judge that it grows somewhere in that part of Assam which is so unhealthy that it is hardly ever visited on account of the risk. Be that as it may, it is a great desideratum at the present time, and many amateurs would welcome an opportunity of adding to their collections a plant of which Sir William Hooker remarked that "the blossoms are certainly amongst the most exquisitely coloured and pencilled of any in this fine genus."

It is difficult to say exactly how rare the plant is at the present time, but we do not remember to have seen it exhibited, at all events during recent years. The one record we know of—"a Cypripedium entered as Fairrieanum, but which the Committee declined to adjudicate upon, being of unanimious opinion that it was incorrectly named" (*ante*, vii., p. 27) —requiring confirmation. The two or three small plants at Burford have been mentioned in our pages on several occasions, and at page 15 of our first volume it is recorded that "a flower opened towards the end of August, and lasted until the middle of November, and would no doubt have remained longer had it not been fertilized." Messrs. Veitch exhibited it at a meeting of the R.H.S. in November 1880, when it received a First-class Certificate. There is also a record of a plant "over three feet across" which was cultivated at Kew during the time the late Mr. Gower was there (see *ante*, ii., p. 287) and which we should like to know more about.

Concerning its culture, Messrs. Veitch remark:—Many cultivators of Orchids have complained that Cypripedium Fairreanum is a difficult subject to induce to grow satisfactorily. We are inclined to believe that at east one cause of failure is to be found in the stress to which plants have been subjected for the sake of propagation, combined, perhaps, with the too high temperature in which weakly plants have been placed, with the view of inducing rapid growth. It is certain that this Cypripede does not thrive in a high temperature and close atmosphere, but if suspended near the roof glass of the Cattleya or Intermediate house, where it can receive the greatest amount of fresh air and light the circumstances of the house admit of, satisfactory results may with confidence be expected. In evidence of this, we can adduce no better instance than the splendid specimen in the collection of Baron Schröder, at The Dell, near Staines." At Burford it is recorded as growing nicely in intermediate temperature with C. × Leeanum, a fact worthy of note in the case of so valuable and capricious a plant (*ante*. v., p. 206).

Its hybrids, though not very numerous, form an interesting and beautiful series, and from the great probability that the pollen would be used for hybridising purposes as often as available, we can form some idea as to the rarity of the species, and the comparitive scarcity of flowers.

P. × VEXILLARIUM (Fig. 1) was the first Fairreanum hybrid which appeared. It was raised by Mr. Dominy, for Messrs. James Veitch & Sons, from P. barbatum as the mother plant, and flowered for the first time in 1870. It was the second hybrid in the genus, being preceded only by P. × Harrisianum, which flowered in the preceding year. It is still one of the most beautiful hybrids in the group, and the way in which it combines the

Fig. 1. P. × VEXILLARIUM.

characters of its parents is apparent at a glance. The predominating colour is a pleasing shade of vinous purple.

P. × ARTHURIANUM (Fig. 2) was raised by Mr. Seden in the same establishment, and flowered for the first time in 1874. P. insigne was the mother plant, and it is said that only a single seedling was raised. The influence of P. Fairrieanum is apparent enough in the shape and markings of the flower, though in colour it most resembles the mother plant. It is an elegant little hybrid, and flowers during the winter months. It was dedicated to the late Mr. Arthur Veitch. Messrs. Veitch have since raised P. × Arthurianum pulchellum, a seedling from P. insigne Chantini, which

first flowered in 1893, and proved decidedly superior to the original form.

P. × Niobe (Fig. 3).—After an interval of no less than fifteen years, a third Fairrieanum hybrid flowered, namely, P. × Niobe, in 1889. This also was raised by Mr. Seden, the mother in this instance being P. Spicerianum. It was also raised in the collection of Holbrook Gaskell, Esq., Woolton Wood, Liverpool, flowering in 1890. The parentage is said to have been lost, but as the seedlings proved identical with those raised by Messrs. Veitch, there can be no doubt that they originated from the same cross. It is a very charming hybrid, in which the Fairrieanum character is most apparent in the veining of the dorsal sepal, but may also be traced in other parts of the flower.

FIG. 2. P. × ARTHURIANUM (see p. 7).

P. × BALLANTINEI.—The following year Messrs. Veitch flowered another charming little Fairrieanum hybrid, which Mr. Seden obtained as a seedling from P. purpuratum. It is quite intermediate between the parents, and both sepals and petals are beautifully veined with purple. It was originally described as Cypripedium × H. Ballantine, but the name is modified above in accordance with the R.H.S. rules for the nomenclature of primary hybrids.

P. × JUNO is a very beautiful hybrid raised in the collection of D. O. Drewett, Esq., Riding Mill on Tyne, by Mr. A. J. Keeling, from

P. callosum ♀ and P. Fairrieanum ♂, and flowered for the first time in 1891, when it is said to have been only two years and eight months old counting from the date that the seed was sown—certainly a very remarkable record. It bears a considerable resemblance to P. × vexillarium, as might be expected from the affinity of the mother plants. It is an eloquen, testimony to the beauty of the five hybrids already mentioned that each one received a First-class Certificate when exhibited at meetings of the R.H.S.

FIG. 3. P. × NIOBE (see p. 8).

FIG. 4. P. × EDWARDII.

P. × EDWARDII (Fig. 4) was raised in the collection of Henry Graves, Esq., Orange, New Jersey, by Mr. R. M. Grey, it is said, from P. superbiens ♀ and P. Fairrieanum ♂, and flowered for the first time towards the end of 1892. It was described and figured in the very first issue of this work, being dedicated to Mr. Graves' eldest son. It is more delicately coloured than might have been expected from the parentage, and the strongly ciliate petals and comparative absence of spots suggests the question whether the record is strictly correct, and whether P. Dayanum may not have been the seed parent. It has received an Award of Merit from the R.H.S.

P. × CONSTABLEANUM is a hybrid between P. Fairrieanum and P. Dayanum, which was raised by Messrs. Pitcher and Manda, of Shorthills, N. Jersey, and was described very early in 1893, on the occasion of its first flowering, being dedicated to F. A. Constable, Esq., of New York. P. Fairrieanum is said to have been the seed parent, which, if correct, is extremely interesting. The characters of P. Fairrieanum are said to be more than usually pronounced in this hybrid.

P. × FAIRRIEANO-LAWRENCEANUM also appeared in 1893, first in the collection of R. H. Measures, Esq., of Streatham, and shortly afterwards in that of T. Statter, Esq., of Whitefield. P. Lawrenceanum was the seed parent. It bears a considerable resemblance to P. × vexillarium, but is larger and lighter in colour. It has received an Award of Merit from the R.H.S.

P. × AMESIÆ.—A hybrid derived from P. tonsum ♀ and P. Fairrieanum ♂, which flowered in the collection of Mrs. F. L. Ames, of North Easton, Mass., in 1895, and was described in *American Gardening* as Cypripedium × Mrs. F. L. Ames. The name is now Latinized in accordance with the R.H.S. rules.

P. × BALMEDIEANUM is said to have been derived from P. Stonei ♀ and P. Fairrieanum ♂, but, owing to some transverse veining in the leaves, it has been suggested that the second parent was P. × Harrisianum. It was exhibited at a meeting of the R.H.S. in August, 1897, by W. H. Lumsden, Esq., Balmedie, Aberdeenshire.

In April, 1898, a very pretty hybrid was exhibited at a meeting of the R.H.S. by A. Warburton, Esq., Vine House, Haslingden, which was said to have been raised from P. bellatulum and P. Fairrieanum, but we have not seen it.

(*To be continued*).

SEEDLING ODONTOGLOSSUMS.

We are glad to hear of further progress being made in raising seedling Odontoglossums. Mr. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, writes :—" I am pleased to say that we have a nice lot of seedling Odontoglossums coming on—crispum × pulchellum, crispum × Harryanum, Pescatorei × cirrhosum, and various others, and all doing well with the exception of the first named, which progresses very slowly." The combinations mentioned cannot occur in a wild state, but we hope to hear of others which will throw further light on the origin of some of the doubtful natural hybrids which have recently been discussed in these pages.

CULTURE OF ORCHIDS IN LEAF-MOULD.

An interesting article by Mr. G. T. Grignan on the culture of Orchids in leaf-mould in the establishment of MM. Duval et fils, at Versailles, appears in *Le Jardin* for December 20th (p. 374). Several houses are devoted entirely to Orchids, which are cultivated with great success in a compost consisting largely of leaf-mould, and M. Beuchel, the *chef de culture* of the establishment, has communicated to the German periodical, *Die Gartenwelt*, particulars of the treatment.

The compost used is a fibrous forest soil, consisting chiefly of half-decomposed leaves, and it is used just as it arrives, without intermixture with sand or any analagous substances. It is best to reject the fine earth which falls out when the large pieces are broken up, for otherwise the compost is not open enough, and therefore remains wet for too long a period, and thus causes the roots to perish. It is used both for established plants and for newly imported ones, and in much the same way as polypodium fibre. It may also be used for seed pans, but in this case the leaves should be cut a little, and a little chopped sphagnum should be mixed with the soil to prevent it from being carried away by the watering, and as it is indispensable that the plants should be elevated above the edges of the pots, it should be surfaced with a thin layer of clean sphagnum, and in order that this sphagnum may hold well in its place it should be cut rather short, and moistened before putting it on.

After repotting it is a good plan to syringe the plants several times daily during fine weather, so as to keep the sphagnum moderately wet, and this accelerates root growth.

When the young roots begin to bury themselves in the soil one can begin to water, at first moderately, increasing the amount in proportion as the roots develop.

Provided that one works with some precaution, the plants push forward well and vigorously. There is no need of manure, for the soil contains in itself many more nutritive substances than does polypodium fibre.

It is necessary to carefully observe the time of rest, and particularly to see that the bulbs ripen and harden well, for these acquire, in this soil, a greater fleshiness than in polypodium and sphagnum. To secure this result it is necessary to give the plants plenty of air and sun after the completion of the bulbs, and only sufficient water to prevent the leaves and bulbs from shrivelling.

Vandas, Aërides, and Angræcums prosper greatly in this soil; nevertheless, I should not advise this method of culture for these three genera, as they produce a vigorous vegetation, but far fewer flowers.

All gardeners have not at their disposal a soil similar to that which we

use, but it can be easily replaced by a fibrous heather earth mixed with half-decomposed leaves.

It is added that many of the plants thus cultivated were in a state of remarkable prosperity, particularly Cattleyas, Phaius, Cypripediums, Oncidiums, especially the Mexican ones, Lælia purpurata (superb), and many species of Dendrobium.

It would be interesting to have the experience of those in this country who have tried similar experiments.

NOTES ON ZYGOCOLAX.

THE receipt of three charming little hybrids from the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), furnishes an opportunity of calling attention to a small group for which our gardens are entirely indebted to the skill of the hybridist, and which is known under the generic name, *Zygocolax*. Originally established to distinguish a hybrid between *Zygopetalum crinitum* and *Colax jugosus* (Rolfe in *Gard. Chron.*, 1887, i., p. 765), it now contains at least three different forms, and seems likely to take a still more prominent place in our collections in future. The forms hitherto known are as follows:—

Zygocolax × VEITCHII (Rolfe in *Gard. Chron.*, 1887, i., p. 765). This is the earliest member of the group, and was raised by Messrs. James Veitch & Sons, from *Zygopetalum crinitum* ♀ and *Colax jugosus* ♂, from seed sown in September, 1882. It flowered for the first time in March, 1887, when about 4½ years old, and received a First-class Certificate from the Royal Horticultural Society. It is a beautiful hybrid, combining the good qualities of both parents. A flower from the collection of Sir Frederick Wigan is apparently a form of the same, being substantially identical in character. It was raised by Messrs. F. Sander and Co., St. Albans, though a slight doubt exists as to whether the seed-parent was *Z. crinitum* or the allied *Z. intermedium*. The sepals and petals are green, closely blotched with dark brown, and the lip white with numerous violet-purple spots, arranged more or less in radiating lines.

Zygocolax × LEOPARDINUS (Veitch *Man. Orch.*, ix., p. 66) was also raised by Messrs. Veitch, and is believed to be a hybrid between *Zygopetalum maxillare* and *Colax jugosus*. It flowered for the first time in 1886, and was described by Reichenbach as *Zygopetalum* × *leopardinum* (*Gard. Chron.*, 1886, xxvi., p. 199). At this time the parentage was doubtful, the author remarking that "the *certificat d'origin* was not to be had, in spite of the careful Sedenian habits." There was, however, little doubt that *Zygopetalum maxillare* was one parent, though the other was doubtful. Subsequent events, however, have shown conclusively that it was *Colax jugosus*. It received a First-class Certificate from the Royal

Horticultural Society in November, 1886. A flower now received from the collection of Sir Frederick Wigan is apparently a variety of the same. It was raised by Messrs. F. Sander & Co., St. Albans, from Zygopetalum Gautieri ♀ and Colax jugosus ♂, but as the first-named is a variety of *Z.* maxillare, the two hybrids must rank as forms of one. The lip is almost wholly violet-purple, and the sepals and petals transversely spotted with deep brown on a green ground.

ZYGOCOLAX × AMESIÆ is the latest addition to the group, having been exhibited at a meeting of the Royal Horticultural Society held on December 19th last, by Messrs. F. Sander & Co., St. Albans, and received an Award of Merit. Its parents are recorded as *Zygopetalum* brachypetalum ♀ and Colax jugosus ♂. The sepals and petals are green, marked with brown blotches, which are confluent into longitudinal lines along the centre, and the lip smaller than in the preceding, and white with numerous narrow radiating purple veins. A flower of this has been sent from the collection of Sir Frederick Wigan.

DENDROBIUM SPECTABILE.

SOME time ago, it will be remembered, Messrs. F. Sander & Co. succeeded in introducing the above remarkable species in quantity, and since then its flowering has been awaited with great interest. At length the anticipated event took place, and a plant from the collection of Major Joicey, of Sunningdale Park, formed the principal object of interest at the Drill Hall Meeting on December 19th last. It bore a raceme of four flowers, and was awarded a First-class Certificate. About the same time it flowered in several other collections, for we received living flowers from the collection of Dr. Hodgkinson, The Grange, Wilmslow, and of O. O. Wrigley, Esq., Bridge Hall, Bury. Mr. Wrigley remarks that the flowers have been slowly expanding for the last month. This raceme bore five flowers, and thus is about half developed as compared with wild specimens. It is also flowering in the collections of Sir Trevor Lawrence, Bart., at Burford, and J. T. Bennett-Poe, Esq., at Cheshunt, so that the species is evidently a winter blooming one. Its history was fully given in these pages in 1896 (*ante*, iv., p. 356), when Sir Trevor Lawrence received a plant from a correspondent in the Solomon Islands. This plant had been four months *en route*, and it was feared would not recover, but fortunately, by careful nursing, it survived and established itself, though the first growths were very small. It is a strikingly distinct species, and its acuminate, undulate, and twisted sepals and petals cannot well be compared with anything in the genus. The lip is also very remarkable, having the front lobe much

elongated, undulate, and acute, and the side lobes are enrolled and united into a ring, which clasps the short column. It was chiefly on this account that it was described as a distinct genus, by Blume, under the name of Latourea spectabilis. The pollinia were also described as two only, and cohering, but examination shows four, and a similar coherence is found in other species of Dendrobium. In fact, distinct as it is, it is allied to D. macrophyllum and D. atroviolaceum. The colours are also remarkable, being light yellow, veined and reticulated all over with purple-brown, which on the lip is of a considerably darker shade. In short, the flowers bear much resemblance to some huge spider. It is a very interesting addition to our collections, and. being a native of New Guinea and the Solomon Islands, will require the same treatment as D. atroviolaceum and D. Phalænopsis.

AN AMATEUR'S NOTES.

THE information given in your November issue as to the sale of Orchids at "The Firs," Warwick (vii., p. 346), was very acceptable, and I would take the liberty of suggesting that you include the results of the sales that take place regularly in London at the various well-known sale rooms. This information would not only be valuable to us provincials, but also to those gentlemen resident even in your neighbourhood.

Last year I was visiting an enthusiastic amateur, who cultivates Odontoglossum crispums almost entirely, under considerable disadvantages, his house being a lean-to facing the south. He had a dozen of O. Hallii in his collection for more than three years, and had only succeeded in blooming one plant. He offered them to me at his first cost, and I closed with him for the lot—there was also a plant of O. Œrstedii crowded with bulbs—but not one of them had flowered. The plants looked well, but I knew that he had almost constantly to keep a heavy thick blind over his house, and even to board up the east end of it, in order to keep down the temperature, which might suit the crispums, but not the Hallii's. My Cool House faces north, and we only shade the south end, and that during sunshine; the lower ventilators are open, I may say, summer and winter. I had these plants only two months when the half of them began to throw up spikes, aud all are growing luxuriantly.

I find a difficulty in growing Cattleya Dowiana aurea in my Warm House, and would be glad to have the benefit of the advice of some of your friends who grow this successfully.

W. G. M.

NATURAL HYBRID ORCHIDS.

SEVERAL years ago I commenced the task of clearing up the origin of the numerous presumed natural hybrids among Orchids, and one of the great difficulties I met with was to ascertain which species grow intermixed in a wild state. The history of Cypripedium or (more correctly) Paphiopedilum × Sallieri is a case in point (*vide Orch. Rev.*, vii. p. 172). Two interesting flowers from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, have fortunately thrown much further light on this question, as the following notes will show. The plants were purchased at one of Messrs. F. Sander & Co's. Sales, at Messrs. Protheroe & Morris' Rooms, as C. insigne montanum, one in 1893 and the other a year later. "I have watched and examined them for several years," Mr. Wrigley writes, "and have an idea that both are hybrids (natural) between insigne and villosum, and thus a form of C. × nitens. I shall be very much obliged if you will carefully examine them to see if you can trace any signs of either or both of them being hybrids." It was obvious at a glance that they were not varieties of insigne, and a comparison showed they came nearest to P. × nitens var. Sallieri. The scape and ovary have not the close velvety pubescence of P. insigne, nor are they shaggy as in P. villosum, but intermediate between the two, while the dorsal sepal and petals showed the same approach to villosum in character that is seen in the hybrid, whose origin and parentage are known. In short they only differ in the way that seedlings out of the same capsule frequently do. As this only confirmed several previous records, which are inexplicable from what is known of the geographical distribution of the parent species, I wrote to Messrs. Sander & Co., who furnished the following very interesting reply to my queries:—

"C. insigne seems to be distributed over a very wide area. We get it from Assam and Burma, and from many stations in the former province, especially the Khasia Hills. We get villosum from Burma, not from Assam, and the form previously thought to be new came from quite a new locality in Burma. We think it quite possible that insigne and villosum do grow together, and we should not like to say that natural hybrids do not exist between them. The variety Boxallii we yesterday divided from a mass of insigne. Last year we had from one collector C. villosum, insigne, Spicerianum and hirsutissimum in the same box, which is apparently conclusive evidence that these kinds grow, if not with, at least comparatively near, each other. There is always great difficulty in getting to know the exact locality of the different plants. Our collectors, of course, employ native labour, and many of these natives go a long distance for plants. You are quite right to try and clear up the origin of all natural

hybrids, and we wish to help you all we can. We hope that further importations will throw more light on the question."

This definite record of the occurrence of P. insigne in Burma is interesting, and I think new; at all events it suggests the probability that the importations which contained the plants of P. × Sallieri came from Burma, also that the so-called insigne pulchellum, reported from Khasia, and which proved to be Sallieri (*Orch. Rev.*, iii., p. 105; v., p. 52), may also have come from Burma. The letter also throws some light on the reported occurrence of P. × Leeanum as a wild plant, a point recently discussed (*ante*, vii., pp. 310, 322), inasmuch as its two parents, insigne and Spicerianum, are shown to have come home in the same box. I certainly hope that conclusive evidence on these points will in due time come to hand, for it is a matter of great interest from many points of view.

I take this opportunity of thanking Messrs. Sander for the information in question. We can all understand the motives which prevent the discoverer of some showy new species from immediately publishing the precise locality in which he found it, but the necessity for secrecy is fortunately only temporary, and as the information is always interesting, and often important, it is the more welcome when it is forthcoming. There is much to be learnt yet respecting the geographical distribution of garden Orchids.

R. A. R.

CULTURE OF ODONTOGLOSSUM CRISPUM.

A GOOD deal has recently been written on the above subject, and the following note from the *Gardeners' Chronicle* for December 23rd last, will probably be read with interest:—"My twenty years' experience has taught me to grow Odontoglossum crispum to perfection. Air in abundance, shade in summer, plenty of moisture in the house, particularly in the summer months, in fact, you cannot keep the house too moist during hot weather; loose potting, for the roots require air, as much so as bulbs and growths; no fire heat applied, or only sufficient to keep the temperature from falling below 40°, and 2° or 3° lower in severe weather. The above methods I have followed for years, and have had spikes bearing from twenty to twenty-four flowers. I have frequently had O. crispum flower from the apex of the pseudo-bulbs, caused, I should suppose, through the extraordinary vigour of the plants, certainly not through weakness or checks. Our Odontoglossum House is 50 feet, and in severe weather it is covered with mats, over the lath blinds. I do not employ much artificial heat, which is the ruin of O. crispum.—H. GARNETT, gardener to R. G. FLETCHER, Esq., Mount Harry, Brighton."

ODONTOGLOSSUM CRISPUM QUEEN VICTORIA.

In continuation of the series of Odontoglossum portraits given in these pages, we now give a figure of the beautiful O. crispum Queen Victoria, which was one of the prominent features of the Temple Show in 1897, on which occasion it was exhibited by Messrs. Hugh Low & Co., and gained the award of a First-class Certificate. The flower is of excellent shape, with broad, flat sepals and petals, and the lip somewhat pandurate, owing to the sides being reflexed about the middle. The petals are white, and the sepals tinged with rose-pink towards the apex. Each of them bears a very large irregular blotch below the middle, of a bright, purple-brown tint, and a few smaller spots near the base. The lip bears a smaller central blotch, and a regular row of smaller spots on either side of the crest. Besides the

FIG. 5. ODONTOGLOSSUM CRISPUM QUEEN VICTORIA.

individual excellence of the flower, the plant was extremely well grown, and bore a compact raceme of numerous flowers, forming altogether a charming picture, which fully justified the award made by the Orchid Committee. It is remarkable how extremely polymorphic this beautiful species is, and what a number of really distinct varieties there are in cultivation. There are variations in the shape and breadth of the segments, the tint of the ground colour, and, in the spotted forms, in the size, arrangement, and colour of the spots, and in this respect, as in others, it stands unrivalled in the genus. The photograph here reproduced was taken by Mr. G. I'Anson.

ORCHIDS IN SEASON.

ORCHIDS which bloom at Christmas and the New Year are a very useful class, and the number fortunately is increasing, owing to the way the species have been crossed together. The hybrid Calanthes now form a very brilliant group, and the chief drawback to their extended culture is that they are so quickly damaged by fogs, which, in the neighbourhood of large manufacturing towns, are too prevalent when these plants are in flower or bud. But in country districts they bloom to perfection, and the wealth of forms now available was well illustrated by the superb group staged by Sir Trevor Lawrence at the Drill Hall, on December 5th last, and mentioned in our Report on another page. A succession of flowers may be secured extending over a period of several weeks by judicious treatment.

The genus Paphiopedilum furnishes some of the best fog-resisting Orchids, and the number of winter-blooming kinds is steadily increasing, owing to the way they have been taken in hand by the hybridist. The more recent additions are not yet generally known, but some of them show a decided improvement on their predecessors. The chief desideratum in this group is increased brilliancy of colouring, and this is only a question of time and perseverance. Progress has already been made, and the chief thing necessary is to eliminate more of the green colour, which changes the purple present into a shade of purple-brown. The varieties of P. × Leeanum and P. × nitens are both numerous and beautiful, and other combinations of the species, P. insigne, villosum, and Spicerianum with P. barbatum and its derivatives are now very effective. P. × œnanthum superbum is one of the best of richly-coloured forms, and a fine example of it comes from the collection of Reginald Young, Esq., of Sefton Park, Liverpool, together with a fine form of P. × Pollettianum, which is equally brilliant in colour, but larger, and the dorsal sepal flatter and more erect, and the white margin broader.

Lælia anceps is one of the gems of the present season, and its beautiful varieties will continue in bloom for some time to come. A fine flower of L. a. Sanderiana is sent from the collection of Reginald Young, Esq. An early three-flowered spike of Cattleya Trianæ is also sent from the same collection. The plant bears ten flowers, and last August produced four others on imported bulbs. This species will soon unfofd its beauty for the present season. Among other species which are very effective just now are Zygopetalum intermedium, Angræcum sesquipedale, and the ever welcome little Sophronitis grandiflora.

Several interesting forms of Odontoglossum crispum are sent from the collection of T. Baxter, Esq., Morecambe, by Mr. Roberts. O. c. Baxteri,

to which a First-class Certificate was awarded by the Manchester Orchid Society at its last meeting, is a heavily spotted form, at present small, but one which good culture should do much to develop. O. c. sulphureum is a pretty sulphur white of good shape, with a few dark brown spots on the lip and minute dots on the basal margin. The colour is said to have been a beautiful sulphur yellow a week ago. O. c. morecambense is a very fine white, with the markings on the lip much as in the preceding. These two each received an Award of Merit at the same meeting. One called O. c. guttatum xanthoglossum, which received an Award of Merit at the previous meeting, is a form of O. × Denisonæ, with white sepals and petals, each bearing a few large brown spots, and the lip yellow throughout with a few small spots. A smaller form of the same hybrid has the yellow confined to the lip's disc, but the colour and markings very similar. Other forms included are O. c. platychilum, a round, white flower, with very broad, flat lip, a good, well-spotted O. × Andersonianum, forms of Dendrobium Phalænopsis, Cymbidium × Winnianum, and two or three other useful winter-blooming things.

Flowers of Odontoglossum × Andersonianum, as exhibited at the R.H.S. meeting on November 7th last, are sent from the collection of Major-Gen. Gillespie, Brynderwen, Usk. The ground colour is lemon yellow, with the sepals and petals spotted with rufous-brown. The spike bo e fifteen flowers, and, curiously enough, the two lowermost had each an additional petal, and one of them had two lips.

THE HYBRIDIST.

Lælio-cattleya × Cranstonæ.

"About six years ago Mr. Crawshay, when calling upon the late Major-General Berkeley, fertilised a Cattleya Harrisoniana violacea by Lælia tenebrosa. From the resulting seed-pod a large quantity of seeds germinated, and about fifty of them grew into nice little plants, which are now in several collections." Thus writes Mr. James Godfrey, who had charge of the late gentleman's collection, but is now gardener to Dr. Cranston, Broad Street, Ludlow, where one of the seedlings has now produced a couple of flowers, one of which has been kindly forwarded. It is an interesting and pretty little hybrid, quite intermediate in general character. The foliage is said to show much of the Lælia tenebrosa character, but the growths sometimes produce two leaves, as in the Cattleya parent. The sepals and petals also most resemble this parent in size, shape, and colour, but the lip is much less distinctly three lobed, and the corrugated keels are much reduced in size, and show only a trace of light yellow. The front and side lobes are beautifully crisped, and the

colour light purple with darker radiating nerves. The disc is nearly white, veined with light purple. It is dedicated by request to Mrs. C. B. Cranston. At present the plant is weak, but it will be interesting to see it hereafter, when it has become strong and the flowers have attained their maximum development.

PAPHIOPEDILUM × GANYMEDES.

This is a large and handsome hybrid raised in the collection of Reginald Young, Esq., Sefton Park, Liverpool, from P. tonsum ♀ and P. × œnanthum superbum ♂, whose characters it very clearly combines. The dorsal sepal is rounded, over $2\frac{3}{4}$ inches broad, and nearly flat, strongly veined and reticulated with deep brown, and the veins passing into rose as they approach the broad white margin. The petals are nearly horizontal, and have much of the characteristic tonsum shape and spots, though the ground colour is many shades darker; and the lip also approaches that of thisp arent in shape, with a much richer colour. A flower of the pollen parent is sent for comparison, which shows how much the markings of the dorsal sepal in the offspring differ, while retaining much of its characteristic colour, in fact the spots are nearly obliterated except in the centre. It is a very promising addition to the group of richly coloured hybrids.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDEES.

We regret to hear from Prof. Cogniaux that the above interesting and most useful publication has not answered the expectations of the Committee, consisting of Messrs. Peeters, Madoux, Jules Hye, and Vuylsteke, who have hitherto managed it, and that they are not themselves disposed to carry it further. Messrs. Cogniaux and Goossens, however, have decided to continue it at their own risk, and we hope that under the altered conditions proposed they will obtain that increased support which will justify their decision. The *Dictionnaire* will appear in future every two months, and the subscription is reduced to twenty-four shillings a year, payable in advance. Each part will contain thirteen coloured plates, with accompanying text. Of the beauty and accuracy of these plates we have spoken on various occasions, and the 468 published during the first three years form an exceedingly valuable series, and, we understand, are to be obtained at the price of 180 francs, from M. Goossens, 24, Rue Quinaux, Schaerbeek-Brussels, to whom subscriptions should alone be sent. The November number, being the first of the new volume, contains:—Anguloa Clowesii, Cattleya Rex, C. × Atlanta inversa, Cochlioda rosea, Dendrobium Victoria-Regina, Epidendrum atropurpureum longilabre, E. xanthinum, Grammatophyllum Rumphianum, Lælia xanthina, Maxillaria striata, Mormodes Ocanæ, M. Buccinator, and M. B. citrinum.

CALENDAR OF OPERATIONS FOR JANUARY.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

The most suitable temperatures for the present month are as follows:—

EAST INDIAN HOUSE.—Day, 60° to 65°; night and morning, 50° to 60°. These figures are for fire heat alone, with sun heat another 5 or 10 degrees may and should be allowed.

INTERMEDIATE HOUSE.—Day, 55° to 60°; night and morning, 55° to 55°. During severe weather it may fall another 5 degrees, and during bright sunny days it may rise 5 to 10 degrees.

COOL HOUSE.—There should now be very little difference between this and the last named house. It may, however, go as low as 40° in cool weather, for short periods only, and as high as 60° when it is possible to ventilate, but only then, for 60° without free ventilation would have a tendency to "draw," or to produce immature or weakly growth.

ATMOSPHERIC CONDITIONS.—As growth is now practically at a standstill, a very small supply of water distributed on the floor, stages, &c., will suffice to produce a health-giving atmosphere. The outside conditions of the weather and thermometer must necessarily be the only proper and correct guides. It should be borne in mind that the greater the heat from the hot water pipes, the greater the evaporation, and more moisture should be put down accordingly. Avoid using more artificial heat than is really necessary to maintain the foregoing temperatures. Avoid a continually saturated atmosphere, or anything that may be calculated to excite growth prematurely, which is a certain cause of weakness, and produces spot and other diseases. But, on the other hand avoid anything tending to excessive drought and arid conditions of the atmosphere, for that is equally fatal, as it tends to exhaust the natural supplies of vigour, and is favourable to insect pests, all more or less objectionable.

WATERING.—Similar caution should be exercised here. I can only say, pursue an intermediate course, do not (except in a few isolated instances) bake up the compost, and keep it for lengthened periods—to use a common phrase—as dry as a bone; on the other hand, do not keep it continually wet. No matter whether the plant may appear to be in growth or at rest; this advice, during the present and the following month, will be perfectly sound. The exceptional cases mentioned above are such Orchids as Barkerias, Cyrtopodiums, Mormodes, Catasetums, Cycnoches, the deciduous Calanthes, Thunias, and such like deciduous kinds. If the above remarks on watering should appear to amateurs who may be in search of information to be somewhat vague, let me say that it is difficult in the extreme to make oneself clearly understood as to when a plant should be watered, because so much depends upon local circumstances, which are so varied. One person

may use more fire heat than another; the position of the structure may be entirely different; the receptacles in which the plants are growing may be over large or small; the compost may be of various qualities and quantities, good or bad, fibrous and porous, or otherwise; and all these things have an influence, and should be duly taken into account by the cultivator. Therefore, to say decidedly when and how often to water would probably be misleading to some, if correct for others. All that I can say further is that it is invariably safer to err on the dry side during this season, rather than on the wet side, for Orchids of every description and in any kind of structure.

PLEIONES.—These are of exceptionally easy culture, and are certainly worth growing well, for well bloomed pans or baskets during the months of September to November are most attractive. Of course, as in all other species, the stronger the pseudobulbs, the better and more perfeet will be the flowers. A common error made is to rest the plants, after blooming and re-panning. Immediately after blooming new growth commences, and if re-panning is intended it should then be done, the plant afterwards being placed in the Cool house, near the roof glass, and kept moderately moist. Growth will then be slow, but sturdy, and when spring arrives they should be taken to a sunny position in the Cattleya or Intermediate house. The compost should be lumpy peat and chopped sphagnum moss; a little leaf soil or fibrous loam and sharp sand may also be mixed in with advantage. The bulbs, having no old live roots, must be made firm with the aid of wooden pegs, so that the new roots, when they appear, may grip the compost and remain firm. The bulbs must not occupy too much space, but be set pretty thickly, leaving just enough room between each bulb for the new ones to grow and expand. It is not always necessary to re-pot every year. Two inches of soil is quite sufficient, and I prefer to leave the surface pretty level, raising the centre only slightly, the whole then gets an equal amount of water.

CYPRIPEDIUMS.—The above compost is suitable also for Cypripediums, and many of these may be now repotted if desirable, selecting those which have recently finished blooming. They soon recover from root disturbance if given intermediate temperature, and their surroundings are kept fairly moist.

NEWLY IMPORTED DENDROBIUMS. — These will soon be arriving. Already a fine batch of D. nobile is to hand, and if the old pseudobulbs are not too much knocked and broken they will bloom pretty freely this same season. They should be potted up in small receptacles as soon as convenient and made quite secure, giving them Cool house treatment for a month or so. Little water will be required, but enough should be given to gently assist the efforts in growth. After a month or six weeks of this they

may be removed to the Intermediate house. Never try to force newly imported Orchids into growth too quickly, but allow them to come away slowly and surely, and always endeavour when potting them up to form handsome and neat plants, for before new growth has started an ill-shaped, newly-imported plant may by judicious ties and stays be converted into a fairly respectable shape, but when once it is established it is well nigh impossible to alter the shape. Bear in mind that however scandent or leggy the mass is, compost must come well up to the leading pseudobulb, so that the new roots may enter it immediately they push forth. With Dendrobiums this difficulty of awkward plants to deal with is not so frequent as with some of the Cattleyas, Lælias, &c. With these it is often necessary to part them into several pieces and again reconstruct the mass.

TREATMENT OF LATE ARRIVALS.—Those who received newly imported Orchids during the autumn and winter months will find that it is necessary to give them a more liberal treatment than is necessary or advisable for their established plants. Unlike the latter, they have no roots of their own, and are therefore unable to withstand the same conditions. It is scarcely necessary to repot them all up directly they come to hand, but they should without exception be given a good position on the stage, and moistened by the syringe once or more a day according to circumstances; the roots will then soon commence to push, when they should be done up and treated still somewhat liberally. Such plants often make a small new pseudobulb by the spring, and then start again at the proper time and make a fine strong one; others will perhaps not break, but content themselves by forming new roots. In any case they must be allowed to go pretty much their own way until they again get in the proper run. The attempt to keep back the growth by further drought is not good practice to follow.

DENDROBIUMS.—Many established Dendrobiums have now had a thorough good rest in the Cool department, and are showing flower buds and new growths in profusion. The most forward of these should be selected at intervals and given a slight increase of warmth. They will then soon come into bloom, and thus the flowering period may be extended over several months. Take care, however, that they are not subjected to great heat, or the new growth will come away much too quickly, and be very weak and spindly, which is very undesirable. Increase the supply of water gradually, and when re-potting is contemplated let it be done immediately flowering is over, as new roots then become most active.

RE-POTTING.—Although the season is yet young, and but little re-potting will be required for another month or two, yet a few remarks may not be out of place. With Orchids, as with other plants, it is a most important operation, and it leaves its mark either for better or worse. With the inexperienced and careless it has too often, I fear, the last named

result, but there is absolutely no reason why it should be so, or why anything should happen more than a slight check, which in most cases should be practically unnoticeable. I most sincerely condemn the pernicious practice of overhauling a house, whether it be of Cattleyas, Odontoglossums, or any others, and re-potting everything therein that may look to demand it, quite regardless of whether they are at a fit and proper stage of growth to be re-potted. For instance, one plant may have just commenced growth, another may have it half completed, whilst a third may be at rest. For the first it would be all right; it would quickly recover, and grow the better. In the second case a great injury undoubtedly would result; the half-finished growth would be crippled to such an extent that if further progress was not entirely arrested it would make a pseudobulb far beneath the average size. Whilst in the third instance the tendency would only be to weaken. Make it a practice to re-pot each plant at the proper time only, which is just prior to the new roots and new growths appearing. The plants will not only be the better for it, but it distributes the work, and prevents undue pressure at any particular time. Although so early in the year, a good many Odontoglossum crispums and others in the same house are in a fit condition to pot. So might be a few of the early Cattleyas, such as C. Trianæ, for if these are handled with great care they may be done with even better results before blooming than after; but whether to do them before or after blooming must be left pretty much to the discretion of the cultivator, for he alone can see in what stage the new roots and growths are, and how far advanced they are likely to get before the flowering period is over. There is a great difference in varieties in this respect, some making great headway before blooming and some scarcely any. The same may be urged respecting Dendrobiums, and indeed most other genera. If he potting is done just prior to the starting of the roots, and done well and carefully, no damage can possibly accrue, even though the plant has still to flower. Generally, however, I do not recommend re-potting until after flowering, though in many an instance it may be done by one who follows the growth of his plants closely.

LÆLIAS.—As Lælia anceps, L. autumnalis, and others of the same class pass out of bloom, they should enjoy a fairly long, dry rest, for it will not be until March or April that they will start afresh to make much headway, and that will be early enough to do them up. The white varieties produce roots from the latest pseudobulbs more profusely than the coloured kinds, and seem to love to ramble outside the pot, but they should be conducted to the compost wherever possible. They generally require re-potting a little before the others.

INSECT PESTS.—Always be well on guard against yellow thrips, and on the slightest traces thereof, fumigate speedily with *XL.-All* insecticide,

and as an additional precaution dust down in the axils of the leaves, and on the growing spikes of Odontoglossum, Oncidium, &c., a sprinkling of tobacco powder. Nothing is more annoying than to have a good spike of bloom crippled by these pernicious little insects. Also guard such spikes well against the ravages of slugs, by trapping them in scooped out potatoes and carrots, and looking well about for them with a light at night.

GENERAL TREATMENT.—In conclusion, the best possible advice I can give for the present month is to look well after the temperatures and atmospheric conditions generally, avoiding extremes of cold and heat, wet and drought, and making no attempt whatever to force growth, but rather to maintain the plants in a healthy, if stationary condition. Growth will then be the more rapid and healthy when the proper season arrives. Keep things on the dry side, especially all those that are quite inactive, as Cœlogynes, Lycastes, the intermediate Oncidiums and Odontoglossums, and many others. Any that may be growing should receive sufficient moisture only to keep them steadily on the move and to maintain them plump and healthy.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THE last meeting of the year was held at the Coal Exchange, Manchester, on December 14th, 1899, when the members of the Committee present were:—Messrs. G. Shorland Ball (in the chair), G. W. Law-Schofield, Baxter, Parker, Cypher, Lovell, Johnson, and Weathers (hon. sec.).

On account of the severe frost very few plants were staged, but we learn that had the weather been mild, several fine groups would have been exhibited. With the adverse atmospheric conditions, however, the labours of the Committee were very light, and confined almost exclusively to cut blooms.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), showed an interesting Cypripedium seedling (Charlesworthii × tonsum), the characteristics of both parents being clearly defined.

Thomas Statter, Esq., Stand Hall, (gr. Mr. Johnson), showed Lælio-cattleya × Hon. Mrs. Astor (Á. M.), L.-c. × Tresederiana, and a good form of Cattleya labiata.

Ernest J. Lovell, Esq., Alderley Edge (gr. Mr. Garner), showed a fine variety of Cattleya Dowiana aurea.

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Odonto-glossum crispum Baxteri, a very distinct and heavily spotted form, with round flowers of good substance, but on the small side (First-class

Certificate), O. c. morecambense, a white flower, large in size and of excellent shape, which should develop into a very good thing (A. M.), O. c. Heaton Beauty, a very pretty flower with numerous bright red-brown spots (A. M.), O. c. sulphureum (A. M.), O. × Andersonianum, and Cymbidium Mastersii. This exhibitor staged a group for which a Vote of Thanks was awarded.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed Dendrobium Phalænopsis Statterianum, D. P. Shaw Hall variety (A. M.), and another pretty form of the species.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THERE was a good display of winter-flowering Orchids at the Royal Horticultural Society's meeting on December 5th last, but owing to fog the light in the Drill Hall was so bad that the exhibits could only be inspected with difficulty. Two First-class Certificates and four Awards of Merit were granted by the Orchid Committee, the members of which present were as follows:—H. J. Veitch, Esq., in the chair, and Messrs. T. W. Bond, H. J. Chapman, De B. Crawshay, J. Gurney Fowler, T. B. Haywood, E. Hill, J. Jaques, H. Little, A. H. Smee, W. H. White, C. Winn, W. H. Young, and J. O'Brien (hon. sec.).

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged an interesting and beautiful group, to which a Silver Flora Medal was given. It was largely composed of hybrid Calanthes, about sixty well-grown plants being included. The varieties were C. × Veitchii splendens, carmine rose with a white eye, C. × burfordiensis, differing in having a crimson eye, the richly-coloured C. × revertens, C. × Clive, purplish rose, C. × Bryan, white with claret eye, C. × wylamensis, white with purple-rose centre, two good whites in C. × Veitchii lactea and C. × nivea, the pretty blush C. × Victoria-Regina, C. × amabilis, C. × labrosior, and C. × versicolor. The group also included Odontoglossum blandum, the rare Dendrobium Hughii, D. cymbidioides with six spikes, Masdevallia hieroglyphica, Maxillaria elegantula, Oncidium olivaceum, two fine specimens of Cypripedium Spicerianum with ten and fifteen flowers respectively, C. × Juno, C. × Statterianum, bearing three scapes, two of which were twin-flowered, C. × microchilum, &c. C. × Hera var. Euryades (Leeanum × Boxallii) is a very fine hybrid which gained a First-class Certificate. The dorsal sepal is rounded, emerald green below and white above, with many purple blotches, while the petals and lip are shining and well tinted with purple-brown.

H. S. Leon, Esq., Bletchley Park (gr. Mr. Hislop), sent Cattleya × Maggie Raphael (C. Dowiana ♀ × C. Trianæ ♂), a very beautiful hybrid, which secured the award of a First-class Certificate. The sepals and petals are Indian yellow in colour, the latter being tinged and veined with purple towards the margin, and the lip of a rich purple shade, somewhat lighter towards the sides and apex.

The Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham (gr. Mr. Smith), sent Sophrocattleya × Chamberlaini var. triumphans (C. Harrisoniana ♀ × S. grandiflora ♂), a beautiful variety, to which an Award of Merit was given. The sepals and petals are reddish crimson with darker veining, and the lip chrome yellow, with the apex of the front lobe and margin of the side lobes purplish crimson. The original form was described at page 270 of our sixth volume. He also sent the pretty Cattleya × Miss Endicott (maxima × Loddigesii), a pretty light-rose flower with the labellum finely veined with purple.

John S. Moss, Esq., Wintershill, Bishops Waltham, showed a fine form of Cymbidium Tracyanum and C. longifolium, the latter a Himalayan species allied to C. giganteum, to which an Award of Merit was given.

The Hon. Mrs. Albert Brassey, Heythorp Park, Chipping Norton (gr. Mr. Downing), sent a group of well-grown Calanthes, consisting principally of C. vestita rubro-oculata, C. v. luteo-oculata, and C. × Veitchii.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed a fine plant of Cypripedium × Leeanum giganteum, rather darker in colour than the original.

Leopold Rothchild, Esq., Gunnersbury Park, Acton (gr. Mr. Hudson), showed the pretty Cattleya Harrisoniana candida and Lælia autumnalis.

T. W. Thornton, Esq., Brockhall, Weedon, sent a spike of Cattleya × Euphrasia (superba × Warscewiczii Sanderiana), the produce of a plant raised in the collection from seed sown in 1890, now flowering for the first time. It is much like the original form raised by Messrs. Veitch.

Messrs. Linden, L'Horticulture Coloniale, Brussels, sent several Oncidium Forbesii, one large and handsome form called O. F. moortebeekiense securing an Award of Merit. A similar award went to O. varicosum Lindeni, a large and handsome form with a chestnut brown blotch surrounding the crest.

Messrs. James Veitch & Sons, Chelsea, sent the pretty Cypripedium × Minos magnificum (Spicerianum × Arthurianum).

Messrs. F. Sander & Co., St. Albans, staged a small but interesting group, containing Phalænopsis Sanderiana, the distinct Dendrobium Hodgkinsoni (Rolfe), a plant introduced from New Guinea with D. spectabile, and allied to D. atroviolaceum, except that the petals are

narrow, connivent and unspotted, Angræcum Humblotii, Æonia polystachya, some hybrid Cypripedes, Lælio-cattleya × intermedio-flava, and L.-c. × Wilsonæ (C. labiata × L. Dayana), an effective hybrid of good shape, having light rose sepals and petals, and the lip claret-purple with a rose-coloured tube veined with dark purple.

M. Ch. Vuylsteke, Loochristy, Ghent, seat two pretty forms of Odontoglossum × spectabile, raised from O. crispum × Harryanum, and from the reverse cross. They are very beautiful, and most resemble O. Harryanum, except that the flower is flatter, the ground colour lighter, and the markings more broken up.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, showed a form of Cymbidium Tracyanum in which the markings were less pronounced than usual.

Messrs. McBean & Sons, Cooksbridge, Sussex, showed a fine form of Odontoglossum × Andersonianum, with broad, heavily blotched segments.

The last meeting of the year was held on December 19th, and although the Orchids exhibited were not numerous, they were excellent in quality, the awards including three First-class Certificates and four Awards of Merit. It is interesting to note that the beautiful Dendrobium spectabile was exhibited for the first time at this meeting.

W. M. Appleton, Esq., Tyn-y-coed, Weston-super-mare, staged a small but very interesting group, to which a Silver Banksian Medal was given. It contained a fine plant of Lælio-cattleya × intermedio-flava Golden Queen, a hybrid Cypripedium called C. × Morteni (Leeanum Masereelianum × Chamberlainianum), having a rather narrow dorsal sepal, green at the base, lined with dark brown, and white above, and a rather elongated reddish lip, C. insigne Macfarlanei, and other varieties, including C. i. "Oddity," in which the two petals are metamorphosed into lips, a curiosity which repeats itself from year to year.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), showed the beautiful Dendrobium Johnsonæ, D. atroviolaceum with four spikes, and the remarkable Dendrobium spectabile, to which latter a First-class Certificate was given. (See note on page 13.)

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond) received an Award of Merit for a hybrid Cattleya called C. × elatior (Schilleriana × Mossiæ Reineckeana), though unfortunately there is a species which bears the same name (see p. 338 of our third volume). It is a handsome thing with blush white sepals and petals, and a lip handsomely marked with bright rose crimson, and near the base some orange and brown lines.

G. W. Law-Schofield, Esq.. New-Hall-Hey, Rawtenstall (gr. Mr. Shill), sent Cypripedium × conco-callosum, a very pretty hybrid which received

an Award of Merit. The flower is white, prettily flushed with rose-purple, and having some green veining at the base of the dorsal sepal, and minute purple spots on the petals. A similar award went to Lælio-cattleya × Wellsiana ignescens, a richly coloured form of this hybrid.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent a finely shaped and coloured form of Cypripedium insigne called C. i. Fowlerianum.

M. Jules Hye-Leysen, Coupure, Ghent (gr. M. Coen), sent Cypripedium × Madame Jules Hye (Spicerianum × tonsum), a fine flower having the dorsal sepal flushed with rose and the mid-rib deep purple.

W. E. Padbury, Esq., Langley Park Farm, Beckenham, sent a fine form of Cypripedium × Antigone.

J. T. Bennett-Poë, Esq., Holmewood, Cheshunt (gr. Mr. Downes), sent Lælia anceps and a very fine branched spike of Oncidium tigrinum.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz). sent an interesting group of cut Cypripediums, including C. × Endymion, C. × Lachesis, C. × Belus, and a particularly fine form of C. × Minos called Young's variety. He also sent a hybrid from C. callosum ♀ and C. × microchilum ♂, which scarcely differs from the former except a little in the colour of the dorsal sepal.

Messrs. James Veitch & Sons, Chelsea, sent a very fine hybrid under the name of Cypripedium × Hera Euryades splendens (Leeanum ♀ × Boxallii ♂), to which a First-class Certificate was given. The usual spots of the dorsal sepal are replaced by a rich rose-purple area in the middle.

Messrs. Charlesworth & Co., Heaton, Bradford, showed Cypripedium × Lord Roberts (Charlesworthii × Creon), a very fine and richly coloured hybrid to which a First-class Certificate was given. The upper sepal is broad and flat, amethyst-purple, with darker veining and some white marbling near the apex; the petals rose-purple with some brownish veining; the lip brownish rose, and the staminode lilac with a yellow tooth. They also sent a splendid example of C. insigne Sanderæ bearing six flowers, to which a Cultural Commendation was given.

Messrs. F. Sander & Co.. St. Albans, received an Award of Merit for Zygocolax × Amesiana (Zygopetalum brachypetalum ♀ × Colax jugosus, ♂), a very pretty hybrid, intermediate in size and shape, with apple-green sepals and petals heavily marked with purple, and a white lip with narrow violet radiating lines.

Messrs. Hugh Low & Co. also sent a hybrid Cypripedium, called × Lord Roberts, quite different from that of Messrs. Charlesworth, being derived from C. niveum × venustum. The flower is white, tinged and spotted with rose-purple.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during January, on the 9th and 23rd respectively, when the Orchid Committee will meet at the usual hour, 12 oclock, noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on January 11th. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 until 3 p.m.

Flowers of the charming winter-flowering Lælio-cattleya × Hon. Mrs. Astor are sent from the collection of T. Statter, Esq., Stand Hall, Whitefield, by Mr. Johnson. It has retained very largely the colour of the pollen parent, Lælia xanthina, with broader segments and a rather larger flower, in which the influence of the mother, Cattleya Gaskelliana, is seen.

In connection with the note on yellow Cattleyas at page 364 of our last volume, we may remark that Lælia xanthina seems a very promising parent to use in attempting to obtain a race of yellow hybrids, being so much larger than L. flava, while retaining the tendency to transmit its colour to its offspring, which is so sadly wanting in C. Dowiana. And we would suggest that both the Lælias in question should be crossed with C. Dowiana, for the probability is that excellent hybrids would result.

Another elegant little hybrid from the same collection is Lælio-cattleya × Tresederiana, the result of inter-crossing Lælia crispa and Cattleya Loddigesii. It is fairly intermediate between the two, being more compact than the Lælia, though with its characteristic shape and markings on the lip, and the sepals and petals prettily tinged with rose.

A flower of the plant noted at page 334 of our sixth volume as Cattleya Dowiana Imschootiana is sent from the collection of W. S. M'Millan, Esq., of Maghull, Liverpool. The sepals and petals are white tinged with pale yellow, and thus it forms a marked contrast with the typical C. Dowiana.

Flowers of the beautiful Paphiopedilum × magnificum (P. × Pollettianum × insigne), which received an Award of Merit from the Manchester Orchid Society on November 9th last, are sent by Mr. A. J. Keeling, of Bingley, Yorks. It is a plant of rather complicated parentage, and shows the combined influence of P. insigne, barbatum, venustum, and villosum, though the first-named largely preponderates, for P. × Pollettianum itself has $\frac{1}{4}$ insigne blood in it. It can best be compared with P. insigne, but the dorsal sepal has much less white, and the spots are

much smaller and far more numerous. The petals are spotted at the base, and shining brown near the apex. Some good forms of P. × Ashburtonæ are also sent.

Mr. Keeling also writes that he has several plants of Lælia Jongheana showing flowers, which seems to confirm the record that it is a winter-blooming species.

It is remarkable how greatly many hybrid Orchids improve when the plants become strong. Messrs. James Veitch & Sons send a magnificent five-flowered inflorescence of Lælio-cattleya × Pallas in proof of this, remarking that they have had several others with five flowers during the past autumn. It is the result of crossing Lælia crispa with the pollen of Cattleya Dowiana, and shows abundant evidence of its descent. The sepals and petals are broader than in the Lælia parent, but retain much of its crispness, though the colour is, curiously enough, rose-pink. The lip also much resembles the same parent in shape, except in being broader, but it has the characteristic veining in the throat, and the intense purple-crimson velvety front lobe of the pollen parent. It originally appeared ten years ago, and is certainly a great beauty.

With reference to the "curious seedling" noted at page 357 of our last issue, Mr. Roses writes that he supposes it to have been derived from a stray seed which had lodged there, as the seed pod at the base of which it is growing is green, and consequently has not yet opened.

Flowers of Odontoglossum crispum Meteor, to which an Award of Merit was given by the Manchester Orchid Society in November last, are sent from the collection of William Thompson. Esq., of Stone. It is of excellent form, and heavily suffused with purple at the back of the segments, but only pinkish in front. A handsomely spotted hybrid called O. × Ruckerianum Thompson's var. is also enclosed.

ORCHID PORTRAITS.

(In the present issue we have made a slight alteration in the method of citing the works from which the following figures are drawn, by omitting the minor dates and giving the references in what may termed their permanent form, which we think will be more useful in the end.)

ARACHNANTHE CATHCARTII, Benth.—*Lindenia*, t. 676.

CATTLEYA × MAGGIE RAPHAEL.—*Gard. Mag.*, 1899, pp. 796, 797, with fig.; *Journ. of Hort.*, 1899, xxxix. p. 515, fig. 91; *Gard. Chron.*, 1899, xxvi. p. 482, fig. 158.

COMPARETTIA SPECIOSA, Rchb. f.—*Lindenia*, t. 673.

CYPRIPEDIUM × CANHAMI WUNDSAM.—Wien Ill. Gart. Zeit., 1899, p. 413, t. 4.

CYPRIPEDIUM ARGUS VAR. NIGRICANS.—*Lindenia*, t. 674.

CYPRIPEDIUM × HERA VAR. EURYADES.—*Journ. of Hort.*, 1899, xxxix. pp. 562, 563, fig. 98; *Gard. Chron.*, 1899, xxvi. p. 483, fig. 159.

CYPRIPEDIUM × MILO WESTONBIRT VAR.—*Journ. of Hort.* 1899, xxxix. p. 503, fig. 89; *Gard. Chron.*, 1899, xxvi. p. 413, fig. 131.

DENDROBIUM SPECTABILE, Miq.—*Journ. of Hort.*, 1899, xxxix. p. 562, fig. 97; *Gard. Chron.*, 1899, xxvi. p. 491, fig. 162.

DENDROBIUM THYRSIFLORUM.—*Gard. World*, xvi. 283. with fig.

EPIPACTIS GIGANTEA, Dougl.—*Bot. Mag.*, t. 7690.

LÆLIA AUTUMNALIS ATRORUBENS.—*Gard. Mag.*, 1899, pp. 844, 845, with fig.

MAXILLARIA SANDERIANA.—*Journ. of Hort.* 1899, xxxix. p. 503, fig. 89.

ODONTOGLOSSUM BREVIFOLIUM. Lindl.—*Bot. Mag.*, t. 7687.

ODONTOGLOSSUM CRISPUM MOORTEBEEKIENSE.—*Gard. Chron.*, 1899, xxvi. p. 431, fig. 136.

ODONTOGLOSSUM CRISPUM VAR. ROSETTE, L. Lind.—*Lindenia*, v. 675. This appears to be a variety of O. × Adrianæ.

ODONTOGLOSSUM × LOOCHRISTYANUM LADY BIRD.—*Gard. Mag.*, 1899 p. 780, with fig. A mistake for O. × loochristiense Canary Bird.

ONCIDIUM FORBESII MOORTBEEKIENSE.—*Journ. of Hort.*, 1899, xxxix. p. 539, fig. 94.

PERISTERIA ELATA.—*Gard. Chron.*, 1899, xxvi. pp. 471, 473, fig. 155.

SOPHROCATTLEYA CHAMBERLAINII VAR. TRIUMPHANS.—*Gard. Chron.* 1899, xxvi. p. 446, fig. 141.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

F. J. L., Chicago. Apparently a form of Lælia × Crawshayana.

J. W. P., Croydon. The Cattleya Percivaliana sent seems to be a very good, richly-coloured variety, and the imperfect opening is probably the result of the excessive fog mentioned. It may not be repeated another year.

R. G. T., Streatham. Odontoglossum × Murrellianum.

P. S., Sale. Lælia longipes.

Photographs received, with thanks. A. S. H. (next month).

ERRATA.

A slight mistake crept into our Obituary notice of the late Richard Moore (*ante*, vii. p. 356). His paper entitled "Orchids of the Shan States" appeared in our third volume not second as previously stated.

P. 371. For "Cypripedium × F. Howes" read C. × J. Howse, and for "C. × Perfection" read C. insigne Perfection.

The Orchid Review.

SEVEN years ago, on the advice and with the assistance of several friends, we established this work, in the belief that a monthly journal devoted to Orchidology would be welcomed by amateurs of Orchids.

The step has been fully justified, for the work has been well supported, both at home and abroad, and the attempt to present the information in a form suitable both for present use and future reference has been generally appreciated, as we know by numerous letters which have reached us every year.

It has, however, been pointed out that the work would have a still wider influence if the price were reduced to 6d., under which circumstances many gardeners would subscribe who, at present, find the cost prohibitive.

A reduction in price would necessitate a corresponding increase in the number of subscribers, and with the co-operation of our readers, we believe that this alteration can be effected.

If every reader will obtain one new subscriber to the work, we, on our part, will reduce the price to 6d. monthly at the end of this year. Meantime, in order to facilitate the alteration, we offer to every subscriber a second copy of the work at half price, which will enable those who may

desire it, to secure for their gardener at once a copy at the reduced price.

We have also arranged to increase the number of illustrations, and to effect some other alterations, which, we believe, will add to the attractiveness of the work.

We have still a limited supply of back volumes, and these we have decided to reduce in price at once, which will enable those who have not subscribed from the commencement to complete their sets. These complete sets will become increasingly valuable as time goes on, because of the difficulty of obtaining them after the present stock is exhausted.

These volumes are full of interesting and valuable information, among which we may mention The History of Orchid Hybridisation, from 1856 to the present time, the valuable series of articles on Orchids in the Jungle, by the late Major-General E. S. Berkeley, Hybrid Odonto-glossums, by Mr. R. A. Rolfe, A.L.S., and many others, too numerous to be cited here.

We hope our readers will approve of these alterations, and will in the future, as in the past, heartily support our endeavours to provide a journal worthy of the beautiful group of plants to which it is devoted.

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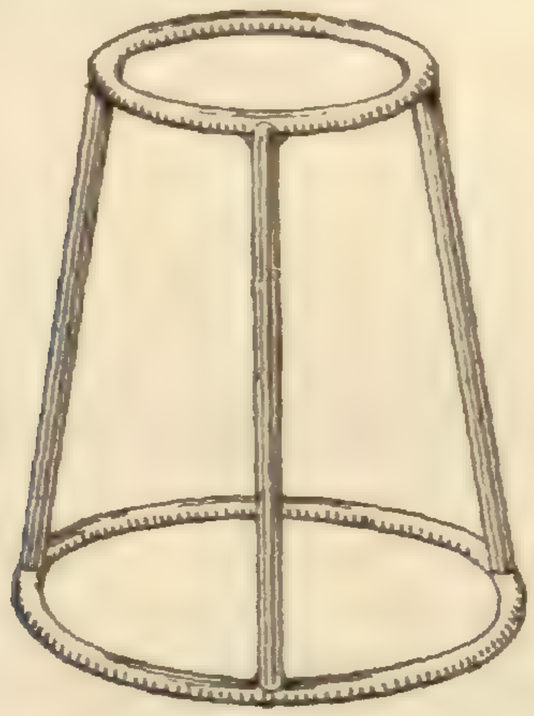

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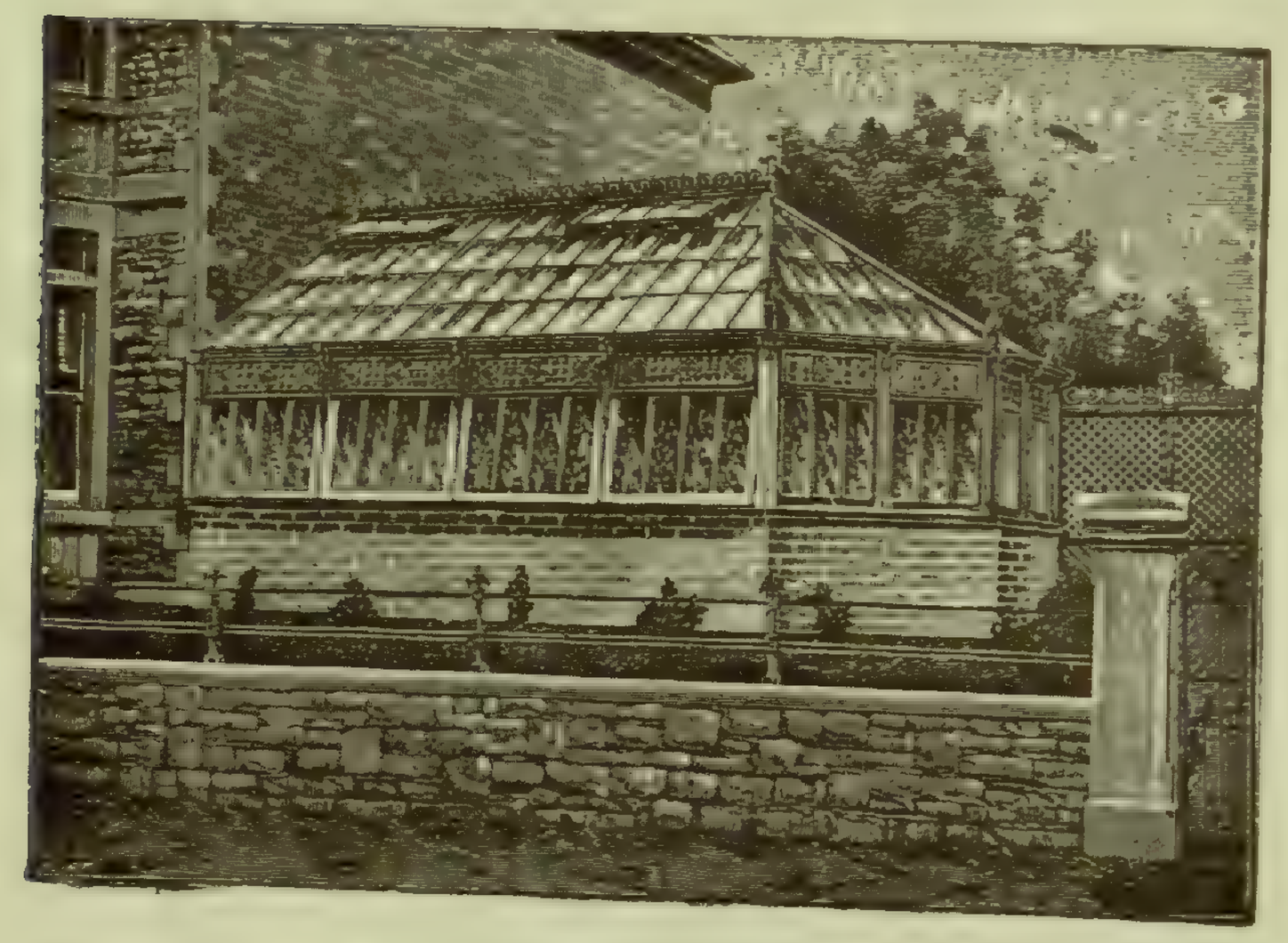

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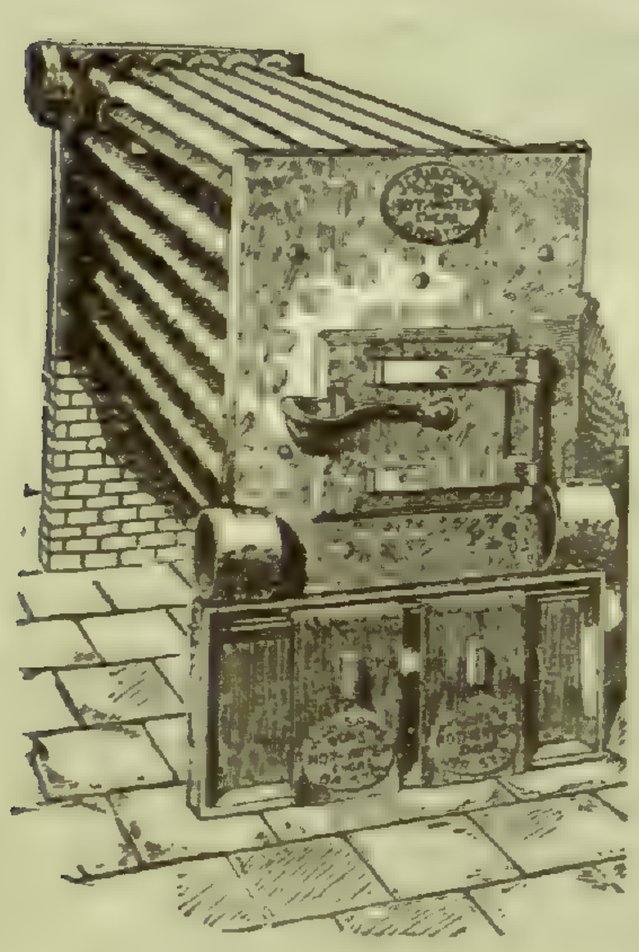

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. VIII.] *FEBRUARY*, 1900. [No. 86.

DIES ORCHIDIANÆ.

WHEN the beautiful Paphiopedilum Charlesworthii was described in these pages in 1893—it was called Cypripedium then—the author remarked (page 355) :—"To the hybridist it should prove a great acquisition, for it presents a colour which has been much sought after, and its handsome dorsal sepal is sure to originate some striking developments, when crossed with other richly-coloured forms." The appearance of the brilliant hybrid P. × Lord Roberts (*ante*, p. 29), served to recall these remarks, and I am inclined to regard this plant as one of the most distinct advances which has yet appeared. It was obtained by crossing P. Charlesworthii with the pollen of the richly-coloured P. × Creon, and received a First-class Certificate from the Royal Horticultural Society. Messrs. Charlesworth & Co. are to be congratulated on their brilliant addition to the group.

It would appear that we are making distinct progress in this genus, for each of the four last meetings of the R. H. S. has produced successful candidates for "First-class" honours—a thing unheard of some time ago. On December 5th appeared P. × Hera var. Euryades, from the collection of Sir Trevor Lawrence. A fortnight later, besides P. × Lord Roberts, we had P. × Hera Euryades splendens, from Messrs. James Veitch & Sons. On January 9th we had P. × Sir Redvers Buller, from the collection of W. M. Appleton, Esq., of Weston-super-mare. Lastly, on January 23rd appeared P. × Sanderiano-Curtisii, from the collection of N. C. Cookson, Esq. It is sometimes said that we have too many hybrids in this genus, and that many of the crosses are not worth making. It may be so, but at all events we are gaining experience and accumulating materials for future progress.

An interesting note respecting our old friend Eulophiella Elizabethæ appears in *Le Jardin* for January 20th (p. 23). M. Grignan relates a conversation which he had some years ago with the distinguished traveller, Humblot, who told him that he was nearly certain that this beautiful plant was communicated to Reichenbach, who called it Eulophia Loise-Chauvierii. M. Grignan, however, does not think that the name has been published, as he has failed to find any record of it.

This may be so, but perhaps the following notes may throw some light on the question. On June 7th, 1892, a plant was exhibited at a meeting of the R. H. S. by C. Ingram, Esq., of Godalming, under the name Cymbidium Loise-Chauvierii, and received a Botanical Certificate. It had green and black flowers, strongly recalling those of Cœlogyne pandurata. Shortly afterwards it was identified with dried specimens collected by Humblot, and described as Cymbidium Humblotii, by Mr. Rolfe, who remarked (*Gard. Chron.*, 1892, xii., p. 8) :—With regard to the name Cymbidium Loise-Chauvierii a word must be said. It has been applied to a so-called "scarlet Cymbidium" (which may be allied to the scarlet Phalænopsis and blue rose), and it would be a pity to transfer it to a plain cousin in green and black in order to avoid the trouble of having to coin a name in harmony with the principles of binominal nomenclature. M. Humblot is equally entitled to the honour, and I should not be surprised to find that the living plant, like the dried one, has been through his hands."

This identification of C. Loise-Chauvierii with the "scarlet Cymbidium" was, if I remember rightly, made by Mr. F. Boyle in a Magazine article, which is reprinted in a work entitled *About Orchids*, where (page 132) I find the following :—Madagascar also will furnish some astonishing novelties; it has begun, in fact—with a vengeance. Imagine a scarlet Cymbidium! That such a wonder existed has been known for some years, and three collectors have gone in search of it; two died, and the third has been terribly ill since his return to Europe, but he won the treasure, which we shall behold in good time." The name, it is true, is not mentioned here, and I cannot refer to the original article, but at all events the identification was somewhere made. The question now is, whether Cymbidium Loise-Chauvierii and Eulophia Loise-Chauvierii are not one and the same plant, and, if so, the far-famed "scarlet Cymbidium" appears to be none other than Eulophiella Elisabethæ, which adds another chapter to the remarkable history of this beautiful plant. Where the "scarlet" comes in is not particularly obvious, but the scapes, bracts, and pedicels are of a peculiar lurid purple tint, and even the backs of the sepals are stained with purple, and this would at least afford a plausible excuse for the title, which is totally

wanting in the case of the green and black Cymbidium Humblotii. This is another little matter which may possibly have to be left until the Reichenbachian Herbarium is opened.

In my notes for November last (page 329), I had occasion to discuss the question of specific names for hybrids, and I am glad to find that M. Cogniaux fully agrees with my remarks. In the *Chronique Orchidéene* (p. 266), he remarks that the nomenclature of hybrids is becoming extremely confused, because they are frequently named without regard to any rule, and, considering the number of novelties which appear almost daily, it may be asked how, in a few years time, it will be possible to trace them, unless we at once adopt some better system. An effective remedy for this confusion would be to reject all specific names—(1), if the cross between the same two species has already been properly named—(2), which are not latinised—and (3), which are formed of more than two words (two being admissible in a few cases where they can be joined by a hyphen). "*We desire greatly*," he adds, "*that the principal organs of the Horticultural Press should give us their views on these three points.*" The italics are his.

It would appear that the question is passing into the practical stage, for I see that in the interesting article on "Paphiopedilum Fairrieanum and its hybrids," commenced last month, the names P. × Ballantinei and P. × Amesiæ appear, instead of "H. Ballantine" and "Mrs. F. L. Ames"—a practical application of the R.H.S. Rules of Nomenclature, which seem to have been almost forgotten, and, I hope, the commencement of a better state of things in the future.

A correspondent, alluding to the article just mentioned, writes:—"Personally, I think P. × Fairrieano-Lawrenceanum worthy of a more euphonious name; I am not fond of these combinations. Fancy writing P. × Chamberlainiano-Rothschildianum! It would be too much for any ordinary gardener." I quite agree; it is an old botanical rule which seems better honoured in the breach than the observance. I remember that it was very fully discussed in an article on the "Nomenclature of Hybrids" last year, (*ante* vii., pp. 106-109.)

Here is an example of what this system of nomenclature would be capable of if applied to Orchids (please take a separate line for it, Mr. Printer):—

Rubus tomentosobellardianoæstivalivestitus.

It is, happily, not an Orchid; it is the name of a hybrid bramble, and I came across it in a recent work, entitled—*Nova Synopsis Ruborum*

Germaniæ et Virginiæ, by Dr. Ernest H. L. Krauss, with other names almost equally formidable. Well may my correspondent observe, How much better are such pretty names as P. × Niobe and P. × Juno!

ARGUS.

ORCHIDS AT THE ROYAL BOTANIC GARDENS, CALCUTTA.

IT may be interesting to readers of the ORCHID REVIEW to have a short note on the cultivation of our favourites at Calcutta, and the following will give an idea how we are geographicaliy and climatically situated. Calcutta is, as may be seen on the map, situated just within the tropics. It has a very prominent cold season, during which the thermometer is known to fall as low as 45° Fahr. on the grass, whilst during the hot weather a hard, merciless sunlight predominates, which often gives a temperature as high as 100° in the shade. It will be understood that these great extremes are the cause why health, or even life, for what may be called really tropical species, is an impossibility.

It will also explain the difficulties under which Orchid cultivation is carried out in the plains of Bengal. Tropical species seem to suffer greatly during the cold season, and on the other hand Himalayan species do not thrive successfully during hot weather. It may also be interesting to state that Burmese Orchids are quite as difficult to keep alive here as they are in European collections. Brazilian species also present many difficulties, and I may take Cattleyas and Lælias for examples, these being the stars of so many European houses. There is very little to be done with them as compared with what can be done at home. I have tried on separate plants, giving to each what we know as their essential requirements, but the results are comparatively insignificant, and the climate seems to be against them altogether. The labiata group especially does badly; the long bulbed section seems to do a little better.

Among Oncidiums, all the fleshy-leaved group, as O. luridum, Lanceanum, and splendidum, as well as the old O. ampliatum and O. Papilio, succeed fairly well, and seem to flower annually. The others, as O. crispum, Forbesii, concolor, tigrinum, prætextum, varicosum, &c., appear to be unable to stand our excessive summer heat.

Amongst Madagascar plants I may mention that the old Angræcum sesquipedale grows and flowers pretty well, but such species as A. eburneum and its allies do not flower at all. Many readers will think that the curious Grammatophyllum speciosum ought to flower with us, as it grows so freely at Singapore, but I am sorry to state that the two specimens we possess present the same peculiarity as the well-known Kew plant: they are

constantly growing, more or less, and the bulbs do not seem to ripen at all. One of our specimens flowered some years ago, shortly after its importation, but never since.

The Orchids cultivated here are mostly natives of India, and the following genera are well represented: — Dendrobium, Cœlogyne, Cypripedium, Bulbophyllum, Eria, Eulophia, Geodorum, Cirrhopetalum, Phaius, Cymbidium, Renanthera, Saccolabium, Vanda, &c., the majority of which are more of botanical interest than decorative, though the display obtained from some of them during the months of March and April is really grand. Cypripedium Spicerianum and venustum, and those of the concolor and bellatulum group, are really the most successfully grown in our latitudes. Such species as C. Boxalii, villosum, and insigne, are practically rebels to cultivation here.

The species of Phalænopsis do well here, and 18-inch leaves are of common occurence. Amongst the most successful varieties let me mention P. Schilleriana, amabilis, and tetraspis.

As will be seen by the above notes, the collection embraces a few representatives of South and Western America, mostly Cattleyas, Lælias, Epidendrums, and Oncidiums. A few species from Tropical Africa are also grown, with a few from Madagascar, and as many representatives of our Asiatic flora as cultivation permits.

According to the last catalogue of plants cultivated in these gardens, the Orchid collection is represented by some 350 species, belonging to about 35 genera, and a few hybrids. It has since increased but slowly, and the difficulties previously described must account for it.

Respecting the mode of cultivation, our Orchids are grown in much the same way as in Europe. As a rule, very little soil or compost is used. Saccolabiums, Aërides, Vandas, Acampes, and all this class, are mostly grown on blocks. A few of them are sometimes met grown in pans, in which case they are simply fixed amongst the drainage. A very thin top-dressing of moss is generally given before the summer, so as to secure to the roots a certain amount of moisture, but it has to be removed at the beginning of the rains, to allow the roots to assimilate the excessive atmospheric moisture.

Plants grown on blocks are syringed several times daily. Dendrobiums, also, are successfully cultivated on blocks, large kinds, such as D. pulchellum (Dalhousianum), moschatum, fimbriatum, &c., are generally grown in pans. Phalænopsis do very well grown on fern stem rafters. Terrestrial species, as Eulophia, Phaius, Geodorum, &c., are grown in a kind of light loam, with a very good drainage; also Cypripediums. Anœctochilus are grown simply in moss and sand. Vanda teres and Hookeriana are always fixed to some big pieces of wood, fastened in pots,

and, with copious syringing, they soon develop their roots. Arundina bambusæfolia is grown as a semi-aquatic plant, that is to say, partly plunged into water, and seems to do fairly well.

Such plants as Cattleyas, Lælias, Oncidiums, &c., are mostly cultivated in baskets or pans, as in Europe. It might be interesting to mention that in my experiments a couple of dozen Cattleyas, of the labiata group, were submitted to open air culture, and have had the whole of our rains, and have stood, practically speaking, 70 inches of rainfall during the past season. No appearance of extra vigour could be noticed, and, as a matter of fact, plants which were at rest before the beginning of the rains have only started into growth during November. This shows what some Orchids can stand.

It also seems to me that American Orchids, such as Cattleyas and Lælias, would be far more successfully introduced if they were firstly established in Europe and sent off while at rest.

As previously mentioned, the cultivation of really tropical plants is extremely difficult in our plains, especially during the cold season. It might also be interesting to say a few words on the kind of conservatory into which such more delicate plants are grown. The original idea of such structures originated with Dr. Anderson, who for several years, was an officer of this institution.

These conservatories, which are now found all over India, are built on the same principle, but greatly improved, as the PANBARIS of the natives of India, in which the Betel Pepper is grown for the market. These native structures are generally built of bamboo, with flat thatched roof. Our conservatories are constructed of a framework of "tee" and angle iron, enclosed and roofed with wire netting. The upright sides are covered with creeping plants, and the roof is covered with a thin layer of thatching grass. This layer is done in such a way as to procure as many interspaces as possible. The object of such a covering is not to exclude light, but to afford a gentle shade, and, in some way, to prevent radiation from the ground at night. This has also the great advantage of admitting rain freely, and preventing it from striking the ground with such force, as our period of rain does not last much longer than three months, during which time the average rainfall varies, according to the last season, from 60 to 70 inches.

A few glass-houses also exist, and are mostly devoted to the cultivation of plants which have to be rested during the rain. This latter structure is pretty much the same as our European ones, but more freely ventilated.

A. E. P. GRIESSEN.

Royal Botanic Garden, Calcutta.

PAPHIOPEDILUM FAIRRIEANUM AND ITS HYBRIDS.

(*Continued from page 10.*)

Two beautiful secondary hybrids have also been raised to which P. Fairrieanum stands in the relation of pollen parent, both of them in the establishment of Messrs. James Veitch and Son, and both flowered for the first time during 1896.

P. × REGINA is a seedling from P. × Leeanum, and thus may be described as having some of the characteristics of both P. insigne and P. Spicerianum, derived through their descendant P. × Leeanum. It received an Award of Merit from the R.H.S.. The blood of the original species is thus represented in it: Fairrieanum ½, insigne ¼, and Spicerianum ¼, and it is curious to note that a hybrid between P. × Arthurianum and P. × Niobe would show an exactly identical analysis. Those who cannot make the original cross, for want of Fairrieanum pollen, might make the alternative cross, and the result would certainly be interesting.

P. × BARON SCHRÖDER is a seedling from P. × œnanthum superbum, and is one of the most beautiful of the group, having received a First-class Certificate from the R.H.S. Its ancestry is rather complex, and an analysis shows: Fairrieanum ½, insigne ¼, villosum and barbatum each ⅛. A hybrid called C. × Germaine Opoix (Grignan in *Le Jardin*, 1899, p. 303), is apparently a form of this, the parents being P. Fairrieanum and a form of P. × œnanthum called Madame Coffinet. It was raised by M. Opoix, at Luxembourg, but it is not recorded which was the seed parent. It is said to bear a considerable resemblance to P. × Arthurianum, but to be larger, more compact, and more richly coloured.

Still more interesting, if correct, is the record of a hybrid from P. × Niobe × Fairrieanum (*ante*, vii., pp. 132, 164), for this would show the unique character of a hybrid three-fourths derived from P. Fairreanum. We hope to receive a flower of it during the coming season.

The influence of P. Fairrieanum may be traced still further through its hybrids, of which the following are recorded :—

P. × vexillarium	(♀)	× barbatum	=	× Singletonianum.
,,	(♂)	× bellatulum	=	× bellatulo - vexillarium.
,,	(♀)	× ,,	=	× Gratrixiæ.
,,	(♂)	× hirsutissimum	=	× Jensenianum.
,,	(♂)	× Spicerianum		× Statterianum.
,,	(♀)	× Stonei	=	× Apollo.
,,	(♂)	× calophyllum	=	× Phœbe.
,,	(♀)	× Io	=	× vexill-Io.
P. × Niobe	(♂)	× Spicerianum	=	× Norma.

P. × Arthurianum	(♂)	× Spicerianum	=	× Minos.
P. × ,, pulchellum	(♂)	× ,,	=	× Alonzo.
P. × ,, ,,	(♂)	× Leeanum	=	× Mary Lee.

(The first and second columns give the two parents, and the third the resulting hybrids. The Fairrieanum hybrids are placed in the first column, and the signs "♀," "♂," following the names, indicate respectively whether they were used as seed or pollen parent.)

Considering the difficulty of propagating P. Fairrieanum by division, and the comparative ease with which seedlings of other kinds can be raised, it has been suggested that attempts should be made to increase it by seed. Of course, there is the risk of seed-bearing to be considered, and, if a perfectly natural, it is sometimes a weakening process. There is the record of the late Mr. John C. Bowring, that in attempting to obtain a capsule he had lost, among others, "a good plant of the rare Cypripedium Fairrieanum" (*ante*, vi. p. 70). If this was in some hybridization experiment, as the context suggests, the risk might have been avoided by making the other species the seed bearer. But this is only possible in the case of *hybrid* seeds. We should like to know if an attempt to raise *true* seeds of this species has been made by anyone, and with proper care we do not see why a reasonably strong plant should succumb under the process. It would, however, be wise to secure a duplicate plant before making the experiment.

Another very interesting experiment which might be tried is that of eliminating the non-Fairrieanum blood from any of its hybrids by repeated crossings with Fairrieanum pollen. Let us suppose that the hybrid "Niobe × Fairrieanum" has really flowered, and we will call it *x*. Now suppose *x* × Fairrieanum = *y*, and *y* × Fairrieanum = *z*, the hybrid *z* would be composed of Fairrieanum blood fifteenth-sixteenths, and Spicerianum blood one-sixteenth, and would in all probability so closely resemble Fairrieanum as to pass for a form of it. Any Fairrieanum hybrid would serve to commence with, and one might soon get a form very similar to the type, with an improved constitution. The rarity of this cherished species is really due to its weak constitution, and the difficulty of propagating it. Its hybrids soon increase by division, as do also the allied species, and it would be interesting to hear of anyone who has overcome the difficulty, and to know how they treat it.

Since the above was written we have found a note, stating that four flowering examples of P. Fairrieanum were exhibited at a meeting of the Société Nationale d' Horticulture de France, at Paris, on October 12th last, by M. Opoix, of Luxembourg. The plants are described as being in perfect health, and worth more than their weight in gold, even including the pots. A First-class Certificate was awarded, with the warmest congratulations of the Committee.—*Le Jardin*, 1899, p. 319.

DENDROBIUM AUREUM.

THE annexed figure shows a remarkably fine specimen of Dendrobium aureum, grown by Mr. R. Roberts, gardener to T. Baxter, Esq., Oakfield, Morecambe, and to which a Cultural Certificate was awarded by the Manchester and North of England Orchid Society on January 11th last. The plant is in a 14-inch pan, and has between seventy and eighty pseudobulbs, of which some twenty-five are in bloom, and they bear an aggregate of 377 flowers. Such an example of this beautiful species we have not previously met with, and we congratulate Mr. Roberts on his success. One of the racemes, bearing four flowers, is also sent, showing it to be a good

FIG 6. DENDROBIUM AUREUM.

form of this rather variable species. It is not as a rule so well grown as D. nobile, or the hybrids between the two species, but is worth all the attention that can be given to it, being most distinct in colour, exquisitely marked on the lip, and deliciously fragrant. It is one of the most widely distributed of Dendrobiums, being found in the southern parts of Ceylon, the Madras presidency, various localities in Nepal, Sikkim, Assam, the Khasia Hills and Upper Burma, also in the Philippine Islands and North Celebes. In certain localities in Northern India it grows in company with D. nobile, but does not attain so high an attitude; in fact its Sikkim habitat is

recorded as tropical valleys up to 3500 feet, and its whole distribution suggests that it requires rather more heat than its allies, especially during the cooler half of the year. For hybridising purposes it has proved most useful, having participated in the parentage of some of the finest hybrids yet raised.

ADVENTITIOUS GROWTHS ON ORCHIDS.

I NOTICE in the ORCHID REVIEW for December last (p. 357) a note by Mr. Ross on a supposed seedling growing from the very base of a seed-pod, and your remarks thereon. I have very little doubt that it is a growth in place of what might have been a bud, and analogous to the aërial growths of Dendrobiums and other Orchids.

In the article which you were kind enough to insert under the heading of "An Amateur's Experiences" in the volume for 1898, I mentioned (page 163) that before ripening of a pod on á small plant of Cypripedium × Leeanum superbum, a little growth was produced, immediately below the pod, from the point whence another bud might have developed had there been a succession of flowers on the same spike. In fact, the first leaf produced had the appearance of a small, deformed dorsal sepal. From the base of this (which almost immediately died off) another little green leaf commenced to grow, just as in a seedling, but rather broader, and in time another little one commenced to show. At about this stage the seed pod above it ripened, and the stalk below the little growth began to wither, and one morning I found the latter fallen on the surface of the compost in the pot. It looked so fresh, and the base of it appeared so firm, though as yet pushing no root, that I was tempted to treat it as if it were a seedling, and potted it up. No change occurred for some time, though it kept its fresh appearance. After a few months, however, I observed that it was commencing new leaf growth, and emitting a little root. It continued to grow slightly, but none of the leaves yet made have been so big as the first made on the plant stalk, and which has since rotted off. It has evidently a poor constitution, and now looks like a small seedling about six months old.

I have not heard of a parallel case in Cypripediums, though, of course, aërial growths in pseudobulbous Orchids with many joints are common.

I am under the impression that the cause of this unusual growth might be the presence of some Jadoo fibre in the compost. The plant has not required re-potting (until quite recently) since 1897, but it has continued to increase its growth and seems very healthy, though it has not been at all floriferous. It has just expanded one fine flower, the first since 1897. Another C. × Leaanum now propucing two flower buds (and which did the same as last year) has not been repotted for a considerable time, Jadoo

having formed a fraction of this compost also, but on the whole it seems to me to encourage growth from several points, these growths taking longer to develop, and probably flowering together, losing vigour, perhaps, a little afterwards.

A rather large plant of C. × Sallieri in my possession, in the compost of which some Jadoo fibre was at one time mixed (though I do not think any is now present), also made luxuriant growth, and has four flowering growths this year. It has also given me two batches of seedlings (in 1897, × venustum, and in 1898, × Leeanum Masereelianum), and is now bearing a pod (× Spicerianum). Perhaps this has told upon it, for I notice that there are many white streaks along the leaves: and seedlings from the cross between this plant and C. venustum (both as pollen and seed parent) have a similar anæmic tendency, the worst affected making very poor progress. Whether this is in any way attributable to the original Jadoo it is difficult to say, none of the seedlings having been grown in any, but possibly they, as well as the old plant, want a stronger compost than they now have. Perhaps one of your readers could suggest some remedy for this anæmic condition.

Whatever the ultimate value of such a material as Jadoo fibre may prove to be as a constituent of a compost for Cypripediums, there seems no doubt that plants so treated can do for much longer in a comparatively small receptacle, and with less water. But still over-watering is more dangerous. On the other hand, the compost should never be allowed to get really dry. I have not as yet noticed that young seedlings derive any advantage from its use—rather the reverse. I have not experimented on pseudobulbous Orchids with Jadoo, but was told by a gardener from Messrs. R. Veitch, of Exeter, that a Cattleya labiata had done well in it for some time. I should scarcely like to try it myself on any Cattleya, unless it were a very common and poor plant that I should not mind losing.

On page 486 of Linden's *Les Orchidées Exotiques* I observe that, speaking of the effect of the climate of the Equator on the culture of Orchids from other regions, he quotes Mr. Rand, of Pará, who describes Phalænopsis Schilleriana as making long spikes, which, though they form bracts from which buds should issue, produce no flowers, but, after a time, at the end of each stalk or ramification, a leaf is developed, and gives birth to a new plant. He had thus thirty plants on one stalk.

E. F. Clark.

Teignmouth.

[In connection with the effect of climate, see the note on Mr. Rand's specimen of Aërides odoratum (*ante*, vi., p. 274). At Pará it grew vigorously for years, but never flowered, but since it was brought to England it has flowered freely each year.—Ed.]

THE GENUS PESCATOREA.

At a meeting of the Royal Horticultural Society, held on November 21st last, two handsome Pescatoreas were exhibited by Frau Ida Brandt, of Zurich, as P. Gairiana and P. Dayana splendens (*ante* vii., p. 375.) The former was also figured in the *Gardeners' Chronicle* as Zygopetalum Gairianum (1899, xxvi., p. 401, fig. 129). Doubts having arisen as to their correctness, I have, with the aid of living flowers, photographs, and two most beautiful paintings kindly lent by the exhibitor, compared them with the materials available, and as no attempt has yet been made to arrange the species systematically, I have drawn up the following outline, with the hope that, in time, it may lead to a better knowledge of the genus. At present, however, about half the species are only known from Reichenbach's original descriptions; had specimens been available, the result might have been somewhat different.

The following are the species at present known :—

1. P. CERINA (Rchb. f. in *Bot. Zeit.*, 1852, p. 667) is the original species of the genus, and one of the best known. It was discovered by Warscewicz on the Chiriqui Volcano, at 8000 feet altitude, and was sold by auction at Stevens' rooms in 1851. It flowered for the first time in Mr. Rucker's collection, and was described by Lindley as Huntleya cerina (*Paxt. Fl. Gard.*, iii., p. 62, fig. 263), the specific name being given in allusion to the waxy texture and colour of the flower. It is figured in *Bot. Mag.*, t. 5598 and several other horticultural works.

2. P. LAMELLOSA (Rchb. f. in *Gard. Chron.*, 1875, iv, p. 225) much resembles the last in colour, but differs in the details of the lip and crest. It is a native of New Grenada, and was collected by M. Gustav Wallis, when collecting for Messrs. James Veitch & Sons. It is figured in *Bot. Mag.*, t. 6240.

3. P. RUSSELLIANA (Rchb. f. in *Gard. Chron.*, 1878, x, p. 524), according to description, is allied to the preceding, and is similar in colour, except that the lip and the tips of the sepals and petals are of a reddish purple hue. It flowered with Mr. J. Russell, of Falkirk, in 1878, but its habitat is not stated. When describing it, Reichenbach remarked :—"There is no end of new Pescatoreas and Bolleas, though it is perhaps not as astonishing as it may appear. The majority of these plants are collected by the native collectors out of flower, one as like the other as one egg to another; hence all are believed to be the same as those collected in the flowering state."

4. P. BACKHOUSEANA (Rchb. f. in *Gard. Chron.*, 1877, viii, p. 456) was introduced by Messrs. James Backhouse and Sons, of York, it is suspected, from Ecuador; and the flower is described as equal to that of a good, well-fed P. cerina, but the anterior parts of the sepals and petals are of a purplish

violet colour. It is said to be "a splendid thing," but seems still to be known only from description.

5. P. WALLISII (Lind. & Rchb. f. in *Gard. Chron.*, 1869, p. 1710) was introduced by M. G. Wallis, "no doubt from Western New Grenada or Ecuador," and flowered with M. Linden, in 1869. A coloured figure in *Flore des Serres*, t. 1828, shows the flower to be cream white, with the apex of the sepals, petals, and lip violet-purple.

6. P. DAYANA (Rchb. f. in *Gard. Chron.*, 1872, p. 1618) is a New Grenadan species which was discovered by M. Gustav Wallis, and flowered in the collection of J. Day, Esq., at Tottenham, in 1872. It is very variable in colour. The original form had milk-white flowers with green tips to the sepals, and the crest purple-violet. Var. candidula is quite white; var. rhodacra (*Bot. Mag.*, t. 6214) has purple tips to the sepals and petals, and the disc of the lip also reddish purple; while var. splendens has still more and darker colour on the same parts.

7. P. RUCKERIANA (Rchb. f. in *Gard. Chron.*, 1885, xxiv, p. 424) was described as "much in the way of P. Dayana, but entirely distinct in the very acute undulate sepals and petals, which appear to be fond of twisting, which produces an entirely novel appearance." Colour white with green apex and a large, light purple area near it; lip purple, with a white callus, and some yellow on the side lobes. It was imported by Messrs. Linden, and flowered in the collection of Mr. Rucker-Jenison, of Flotbeck Park, Hamburg, in 1885.

8. P. BELLA (Rchb. f. in *Gard. Chron.*, 1878, ix, p. 492) was described as a grand beauty, having light whitish violet sepals and petals, with a very broad band of the darkest purplish violet at the apex, and a light whitish yellow lip, with a violet blotch at the apex. Its history is that it was sent to the author by Mr. Harry Veitch, and "may be Neo-Grenadan." Reichenbach, while placing it between P. Roezlii and Dayana, added—"We have had nothing comparable in colour, excepting Bollea cœlestis. I have a melancholy fear it is a mule between this and some Pescatorea. . . As it is, we must wait and observe—*laboremus*; there may come the day when we, or those who will come afterwards, may get the necessary light."

9. P. ROEZLII (Rchb. f. in *Gard. Chron.*, 1874, i, p. 755), is a native of Ecuador, collected by M. Roezl, and was originally described from dried specimens; afterwards flowering in the collection of Sir Trevor Lawrence, in December, 1876. It is allied to P. Dayana, and has cream-coloured flowers, with large violet blotches at the apex of the sepals and petals, and a lip of the latter colour. P. euglossa (Rchb. f. in *Gard. Chron.*, 1876, vi, p. 808), was discovered by M. Edward Klaboch, who thought it identical with P. Roezlii, though Reichenbach, in 1876, pronounced it to be very distinct in the structure of the lip. In 1881, however, he mentioned a P. Roezlii var.

euglossa (*Ill. Hort.*, xxviii, p. 153), which is evidently the same thing.

10. P. TRIUMPHANS (Rchb. f. & Warsc. in *Bonplandia*, 1854, p. 97) was discovered on the Western Cordillera of New Grenada, by Warscewicz, but does not appear to have been introduced to cultivation. According to a figure in Reichenbach's *Xenia* (i. p. 25, t. 11) the sepals and petals are white, with small violet-purple tips, and the lip of the latter colour.

11. P. CORONARIA (Rchb. f. in *Linnæa*, xli, p. 108) is also not known in cultivation. It was collected by Wallis in New Grenada. It is compared by Reichenbach with the two preceding species, though immediately distinguished by the possession of numerous hairs on the lip, which marks its affinity with the succeeding group.

12. P. Klabochorum (Rchb. f. in *Gard. Chron.*, 1879, xi, p. 684) is allied to P. coronaria, and is one of the best known and most beautiful species in the genus. It is a native of New Grenada, and was discovered by F. Klaboch, who wished that it should bear his brother's and his own name. The lower part of the sepals and petals is cream-white, with the upper third usually of an intense maroon-crimson, and the lip hairy and marbled with the latter colour. There is a good figure in the *Orchid Album*, vol. i, t. 17. It is somewhat variable, and two varieties have been described, burfordiensis and ornatissima. P. fimbriata, Regel, *Gartenflora*, 1880, p. 229, t. 1008, and P. Vervaeti, *Fl. and Pomol.*, 1883, p. 10, are apparently forms of the same.

13. P. Gairiana (Rchb. f. in *Gard. Chron.*, 1879, xi, p. 684) is another near ally, which was purchased at Stevens' Rooms in 1876, and flowered with Mr. Gair, at Falkirk, in 1879. It was described as having deep violet sepals and petals, with the anterior halves darkest black purple.

14. P. Dormaniana (Rchb. f. in *Gard. Chron.*, 1881, xv, p. 330) is described as much in the way of P. Klabochorum and Lehmanni, though different in various structural details. The flower is said to be white, with some light sulphur on the crest, and on the ends of the sepals. It was discovered by F. Klaboch, and flowered in the collection of C. Dorman, Esq., of Sydenham.

15. P. LEHMANNI (Rchb. f. in *Gard. Chron.*, 1877, xii, p. 424) is another most handsome species of this affinity, which was discovered by Mr. F. C. Lehmann, in some Andine locality at 1000 to 1400 metres elevation. It can best be described as having violet-purple flowers striped with white, especially at the base of the sepals and petals. It is figured in the *Orchid Album*, ii. t. 57.

(*To be continued.*)

ORCHIDS IN SEASON.

SOME beautiful Odontoglossums are sent from the collection of T. Baxter, Esq., Oakfield, Morecombe, by Mr. Roberts. There are three charming forms of Odontoglossum × crispo-Harryanum—or, as it is now called, O. × spectabile—which differ somewhat from each other, as hybrids usually do. They were shown at the last meeting of the Manchester Orchid Society, one of them being then the property of Messrs. James Backhouse and Son, of York, and each exhibitor gained the award of a First-class Certificate. Another handsome thing which gained a similar award at this meeting is called O. × loochristiense var. It is very similar to the form called O. × l. Canary Bird, noted at page 355 of our last volume, and is said to have come from the same source, so that its identity remains a little uncertain. The flower is yellow, with many small red-brown blotches on the sepals, and fewer on the petals and lip. Several forms of the variable O. × Denisonæ are enclosed, one having a white ground somewhat approaching the original form. A fine yellow ground form, with very heavily-blotched sepals, received an Award of Merit at the same meeting. A second is very similar, and a third is more regularly blotched on all the segments. A dozen forms of the beautiful O. crispum serve to show its great variability in shape and markings. Oncidium crispum, O. varicosum Rogersii, Lælia anceps, L. autumnalis, and some early forms of Dendrobium nobile and D. Wardianum are also included among the beautiful Orchids of the season. Lastly may be mentioned a form of Cattleya quadricolor (chocoensis), with rose-coloured segments, one of the brightest we have yet seen of this rare species, and a finely shaped form of C. Trianæ. All these flowers show evidence of excellent culture.

Some splendidly developed Paphiopedilums sent from the collection of T. Statter, Esq., Stand Hall, Whitefield, by Mr. Johnson, again demonstrate the value of these plants for a supply of flowers during the winter. They are the well known and beautiful P. insigne Sanderæ, the giant P. i. Harefield Hall var., P. × Arthurianum (figured at page 8), P. × Leeanum giganteum, P. × L. Albertianum, characterized by its numerous purple spots on the disc of the dorsal sepal and base of the petals, and P. × Canhamii, a very large light purple flower, with a few small spots on the petals. There is also a splendid three-flowered inflorescence of P. × Morganiæ.

Another fine series is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), in which excellent culture is again apparent. They include three forms of P. × Lathamianum, one of which has the dorsal sepal prettily suffused with rose on either side of the dark purple band; two good forms of P. × Leeanum., excellent forms of P. ×

nitens and its variety Sallieri, P. × J. Howes, a form of P. insigne with very large blotches, the handsome P. × Madame Jules Hye, P. × Ceres var. Fascinator, which combines the characters of P. Spicerianum and P. hirsutissimum in the most charming way, and the richly coloured P. × calloso-barbatum. A seedling from P. Spicerianum ♀ × Sallieri Hyeanum ♂ bears a considerable resemblance to P. × Lathamianum, but is apparently not yet fully developed.

A good flower of the chaste and beautiful Dendrobium Wardianum candidum is sent from the collection of H. Cary Batten, Esq., Abbots' Leigh, Bristol. The sepals, petals and front of the lip are pure white, and the disc orange-yellow, without any trace of the maroon spots found in the typical form of the species. A flower of the pretty Cattleya Trianæ delicata is also enclosed.

MASDEVALLIA XANTHINA VAR. ALBIDA.

MASDEVALLIA XANTHINA, according to Consul Lehmann (*Woolw. Masd.*, t. 82) is a widely diffused and variable species, ranging over a geographical area of at least six hundred miles from North to South, indeed he remarks that "of all known species of Masdevallia, M. xanthina has the most extensive geographical distribution." It is found in very numerous localities in the states of Columbia and Ecuador, growing near the ground on the trunks of oaks and other trees, in dense and very damp woods, at an elevation of about 5800 to 8100 feet, flowering in October and November. The common yellow form known in cultivation comes from Antioquia. Further South, in the province of Cauca, the flowers become larger and paler in colour, var. pallida, Lehm. (figured from Lehmann's drawing in *Woolw. Masd.*, t. 82, fig. 7). He further remarks that "in plants growing on the volcano of Sotarà and at Paisbamba, near Popayan, the flowers are nearly pure white, and have not the purple spot at the base of the lateral sepals which is a constant feature in the flowers from all other localities." This form he appears to have succeeded in sending home alive, for a plant received from him has now bloomed at Glasnevin, which has pale yellowish white flowers, slightly yellower at the base, but without any trace of purple, in which latter respect they chiefly differ from the variety pallida, which does not yet appear to be in cultivation. Owing to its very different colour, the new form looks distinct from M. xanthina, but we may adopt the view that it is only a variety of it.

R. A. ROLFE.

Since this note was written, the plant has been described under the above name by Mr. J. O'Brien—*Gard. Chron.*, 1900, xxvii, p. 33.

PAPHIOPEDILUM × HITCHINSIÆ.

We are now able to give a figure of the charming little Paphiopedilum × Hitchinsiæ, which was described at page 335 of our last volume. It is hardly necessary to repeat the information so recently given, but we may add that the intermediate character of the hybrid is very apparent from the picture. The horizontal petals, with their markings, strongly recall P. Charlesworthii, the pollen parent, and its modifying influence is also seen in the dorsal sepal, lip, and staminode, all of which show a marked departure from the character of P. insigne. It appears to have inherited a

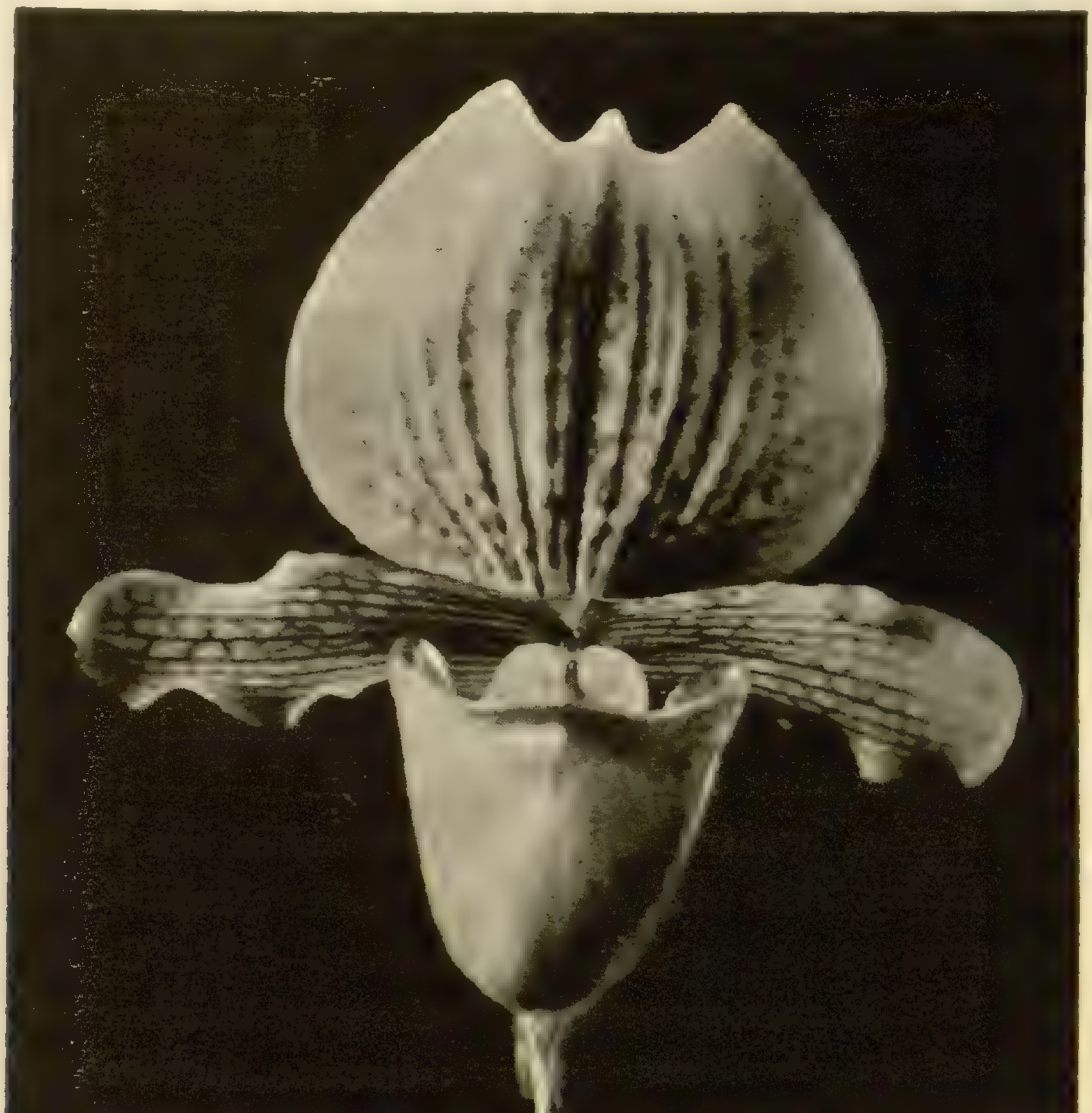

FIG. 7. PAPHIOPEDILUM × HITCHINSIÆ.

good constitution from the latter. As previously remarked, it is best comparable with P. × Leeanum, and, if at present not quite so large as that, the flatter dorsal sepal is an improvement. We have since learnt that the seedlings were originally raised in the collection of the late Major General E. S. Berkeley. We also find that the hybrid has previously flowered, having been raised by M. Duval from the same two species, and described as Cypripedium × Elmireanum (*Le Jardin*, 1899, p. 303). This fact was overlooked when our description appeared, but of course we adopt the earliest name under the correct genus. A considerable amount of

variation may be expected in future, as other seedlings reach the flowering stage, for P. insigne is itself extremely variable. It would be interesting to try the effect of combining the beautiful yellow P. insigne Sanderæ with a richly coloured form of P. Charlesworthii, for it is at least possible that a very distinct variety would result. The photograph here reproduced was kindly sent by Arthur S. Hitchins, Esq., of St. Austell, and is taken from a second seedling which flowered shortly after the one described.

PAPHIOPEDILUM × LEEANUM AS A WILD PLANT.

INFORMATION seems to be gradually accumulating with respect to the occurrence of Paphiopedilum × Leeanum as a wild plant, as the following will show:—

In *American Gardening* for December 23rd last, appears a note by Mr. Oakes Ames, entitled "A natural hybrid Cypripedium × Leeanum," accompanied by a figure (vol. xx., p. 874, fig. 219). The author remarks that it bloomed among plants of insigne imported two or three years ago, and seems to be a natural hybrid, having characteristics of the garden hybrid C. × Leeanum. "That the plant has C. Spicerianum in it in some degree seems highly probable." The dorsal sepal is much narrower than in the ordinary cultivated form, though in the spotting, the narrow, undulate petals, and the shape of the staminode, it is more like Leeanum than insigne, and although somewhat anomalous in shape, it is probably a hybrid, as suggested. It would be much easier to judge from the actual flower than from the sketch.

The second note is by Mr. A. E. P. Griessen, in the issue of *Indian Gardening* for January 11th (vol. vi., p. 20). After alluding to the various notes that appeared on the subject, he remarks:—"Mr. C. H. Swindon, an enthusiastic Orchid amateur residing in the neighbourhood of Calcutta, has also witnessed the above case in his collection, and was kind enough to bring us the plant for identification. . . . This peculiar natural hybrid came out of some importations received by him from various localities. It is very unfortunate not to know the particular one. However, the plant is undoubtedly the result of a cross between C. insigne and C. Spicerianum . . . the owner having found this plant amongst direct importations. . . . The flower appears exactly intermediate between the two typical species."

Mr. Griessen also alludes to the records respecting C. × Sallieri, and adds:—"Following the rules of possibility, there is no reason why C. Lathamianum, which is the result of a cross between C. Spicerianum and villosum, will not also occur in the wild state."

These are interesting contributions to the question, and I can re-echo

Mr. Griessen's wish that some of our Indian amateurs will also enable us to elucidate the query as to whether C. × Arthurianum occurs in a wild state, which still remains doubtful.

R. A. R.

CALENDAR OF OPERATIONS FOR JANUARY.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

GENERAL TREATMENT. — For all matters relating to temperature, watering, atmospheric conditions, and cultural hints generally, refer to last month's Calendar, as the treatment there set forth is equally suitable for the present month, which is usually more or less dull and wintry in character. If, however, there should be spells of bright and clear, frosty weather, the sun will begin to have considerable power, and this, together with the extra heat from the hot water pipes by night, will naturally call for a good supply of water being pretty frequently distributed on the stages, floors, paths, &c., so as to prevent the atmosphere from becoming over-dry, which would tent to exhaust the plants.

SHADING.—We must now give a thought to shading, and, if new is required, to measure up and send off the order, or delays may occur which will prove very inconvenient. In many instances orders are not sent off before the need for the shading is actually felt, and then the manufacturers are so busy that they cannot possibly execute them without considerable delay. There is still some uncertainty which kind of shading is the best to employ, and I suppose it will always be so. If I was asked which was the best, the lath or the net, I could not candidly answer in favour of either. Both are good and serve their purpose admirably, it is therefore a matter of taste or choice. The net is cheaper than the lath, but the latter will last much longer, which comes to about the same thing.

ONCIDIUMS NOT BLOOMING.—A good deal of disappointment is felt when an Orchid that has formed a pseudobulb large enough to produce a spike, fails to do so. Some species of Oncidium do this, and the cause can be summed up in two words, "Too Wet." I refer to such species as O. sphacelatum, aurosum, micropogon, microchilum, crispum, Forbesii, varicosum, and some few others. If these are not given a good rest immediately the new pseudobulb is formed up, they frequently start into growth again from the base, to the detriment of the spike. Generally speaking it is best for Oncidiums to be kept pretty well rested during the winter, as they seem to like such treatment, and keep much healthier than when kept too wet. The same will also apply to Odontoglossums, which also keep healthier, and grow better, if a good rest is given when growth is completed. I am not referring quite so much to O. crispum and its allies as to such kinds as O. grande, Cervantesii, Rossii, citrosum, coronarium,

Insleayi, læve, and hastilabium. In fact, so long as they remain healthy and plump, it shows that the root action is all right, and the only way to keep it so is to avoid too much water at all times.

HABENARIAS.—These tuberous-rooted Orchids, having rested since flowering in the autumn on a shelf, or suspended in some dry position, and examined occasionally to see that they do not become too much dried and shrivelled up, will soon commence to push new growth from the crown, and when this takes place they may be turned out and re-potted in new materials. Use sandy peat and fibrous loam, freely intermixed with broken crocks to keep the whole thoroughly open and porous. Pots rather deep should be used, as the tubers grow long, but they should not be over large, a "60" size being ample for a large tuber, and smaller ones for the others, They should occupy a light position in the Warm house, and be watered very sparingly for a month or six weeks after being repotted, or damping of the tubers may ensue. When in active growth, copious waterings should be given.

DISAS.—These lovely terrestrial Orchids, having been kept tolerably dry in an airy position in a Cool house for the winter, will soon be moving more quickly, and may have their water supply increased. Abstain from giving large quantities for another month or two, by which time the danger of hard frosts will be past, when they may be removed to a cool frame facing north, and receive much air, and copious supplies of rain water throughout the summer. I do not advise the repotting of Disas at this period, as they are now in the middle of their growth, and it checks them too severely. Such work should be done immediately after blooming in the autumn. Aphis and thrip are sometimes troublesome, from which, it is needless to say, the plants should be kept free.

MASDEVALLIAS.—The present is a good month for the re-potting of Masdevallias. They are sometimes kept too wet at the root, and, when so, they grow poorly and flower very indifferently, During summer a liberal quantity of water is highly appreciated, especially if the compost is porous and well drained, but during the winter it is surprising what a little is sufficient to keep these bulbless plants in a healthy, plump condition. Those black marks on the leaves of M. Harryana may be largely attributed. to too much water during winter, and the sudden dropping off of leaves may be traced to the same cause, especially if the temperature falls very low at the same time. Masdevallias are cool-growing Orchids, and may be well cultivated if the above points are attended to. They are now commencing to form new roots, and any that have over-grown their pots should be re-potted. Do not use over-large pots, as a great lot of compost round their roots seems not to suit them. The compost should be pressed in firmly, and should consist of peat and sphagnum in equal proportions. For the Harryana section a little fibrous loam may be added with advantage. Water

somewhat sparingly for a time, until the new roots commence to run, by which time the weather will be more conducive to free growth, and water may be given with greater freedom.

PHALÆNOPSIS.—These lovely winter-blooming Orchids are now practically over for the season, and will enjoy a little rest of about a month or six weeks' duration before commencing to grow again. They should therefore receive very little water, though sufficient to support the large, fleshy leaves, which should remain perfectly plump and healthy. The great thing with this genus is to retain the leaves for the longest possible period, for they are the main strength of the plant. It is better never to risk too much disturbance of the roots for purposes of re-potting, or a collapse is more likely than not to follow. Teak-wood baskets or cylinders are the best, and when a larger one is required, insert the whole bodily into it. This saves a lot of root mutilation which would assuredly happen if an attempt was made to separate the roots from their grasp of the teak bars. Teak is splendid wood for this purpose, as it may be thus buried and still remain sound and sweet for a very long time. I believe it is never known to form fungoid growth. After so inserting one basket in the other, fill up the odd spaces with clean crocks, or charcoal, and a little sphagnum moss here and there, which will keep the whole firm and assist to retain moisture. These plants are peculiarly adapted for basket culture, as the roots love to ramble, and soon leave the basket and strike out in the air, usually taking a downward direction, as though in search of moisture; and of course they do derive much nourishment from the atmosphere. Such roots during the growing season should be freely moistened when syringing with tepid water, and if at any time they should grow too long, so as to be in the way, or be in danger of getting broken, they should be carefully lifted up and coiled round the teak bars once again, to which they will soon become attached. Those not requiring larger receptacles may now have the old sphagnum moss removed and new supplied, being careful not to injure the roots.

CHARCOAL.—Mentioning charcoal reminds me that it is sometimes spoken of disparagingly—in fact, some growers have discontinued its use. For my own part I like it very much, and have never found any ill effects from it, but on the contrary think it a most healthy accessory. I would, however, advise growers not to use it perfectly new, before it has first been well soaked in water, as the roots which come in contact with it may suffer on account of its intense dryness.

DENDROBIUMS.—If these are grown in quantities, as free-growing and flowering ones deserve to be, a beautiful show may be had for many weeks in succession during the winter and spring months. I allude to D. Wardianum, nobile, Findlayanum, crassinode, and others of the same class. Continue to give those most forward in bud a slightly warmer temperature

and increased moisture, so that they come in bloom one batch after another. Some species, though easy enough to grow, and very beautiful when in flower, are not nearly so useful as the above, for the simple reason that they cannot be relied upon to bloom with anything like regularity or consistence. I refer to such kinds as D. clavatum and moschatum, and the only thing to do with them is to give them a good, long, dry rest. D. Dalhousieanum, though not so free as some, flowers pretty well when the bulbs are of large size; it should be rested well, but not in a Cool house. D. Loddigesii will not flower well unless severely rested in a Cool house, as the flower buds all turn to growths.

RE-POTTING.—Get on with this important operation wherever possible. Miltonia vexillaria may be done this month with advantage, otherwise they must be left over until after blooming. They require potting about once in two years. Keep them to comparatively small pots, drain well, and use fibrous peat and sphagnum moss in equal parts. Water very sparingly during winter, and give them a light, airy position in the Cattleya or Intermediate house, when they cannot fail to grow well. If the tips of the leaves decay, it is a proof of either too much water at the root or that the atmosphere is too cold and damp. Among other species which may now be at a suitable stage for re-potting or top-dressing are Lælia Boothiana (lobata) and crispa, Cattleya Warneri, and C. Warscewiczii (gigas), as new growth is now starting. Those which are now re-potted should be kept pretty frequently moistened with the syringe, in order to induce free root action and prevent undue shrivelling and loss of foliage. The next best season for re-potting the above is immediately after blooming.

BROUGHTONIAS.—Some few species of Orchids are suitable only for block cultivation, and this genus is among them. A good many plants have recently been imported. If a piece of tree-fern stem can be secured, it makes a capital block on which to fix them; next to that comes teak wood, and, failing that, any ordinary wood will do. Sometimes one might secure a plant of a suitable shape to fix in a small pan or basket, and, if so, they will do very well. They are heat-loving Orchids, and should be grown in the Warmest house. I cannot highly recommend cork for Orchid culture, though it answers very well for a time, but being continually exposed to the moisture in quickly becomes more or less decomposed.

AMATEURS AND BEGINNERS.—Calendar writers have the habit of mentioning the names of the various houses in which certain Orchids should be grown, as the Warm or East Indian house, the Cattleya or Intermediate house, the Cool or Odontoglossum house, and the Mexican house, whichever has been found in practice the most suitable. This is, of course, a pretty easy and intelligible method of conveying the meaning to others, especially if they have a general knowledge of the treatment

required. To the *bona-fide* amateur, however, and to the new beginner in the craft, information so conveyed is quite as likely to confuse as to assist, and particularly so if they have—as is very often the case—only one house in which to grow their Orchids, and as the Calendar is intended to assist the learner and beginner, I propose henceforth to write a short article each month dealing with such collections, in the hope that it may be acceptable and useful.

THE AMATEUR'S ORCHID HOUSE.—All amateurs, of course, want to grow that very popular and beautiful species, Odontoglossum crispum, together with its allies, aud we may therefore assume that the structure in question is either divided by a partition, or that the owner has a frame or pit which may be used for such kinds during summer, so that the temperature may then be kept cooler for them than for the great majority of other kinds which he can successfully grow. Under such conditions it is really surprising what an enormous number of distinct species can be grown together in one house with but little trouble and expense. It embraces the whole of those commonly known as intermediate, as well as those recommended for the Cool house. They are too numerous to mention separately, but I may briefly say that most of the beautiful Cattleyas are included, as well as the Cypripediums, Oncidiums, Odontoglossums, Lælias, Cœlogynes, Epidendrums, Zygopetalums, Lycastes, Brassias, Maxillarias, Miltonias, and Trichopilias; many of the Aërides and Vandas; some of the Saccolabiums and Angræcums; many Dendrobiums, besides Barkerias, Thunias, Pleiones, and some few others.

GENERAL TREATMENT.—With such a lot of different kinds growing together in one house, the positions must, of course, be selected to some extent, the roof being utilized for certain kinds, and the stage for others, while the exposed and airy places will also find suitable occupants. The same temperature does fairly well for all during the winter, and it should now range fram 50° to 60°, either falling 5° below or rising 5° above for short periods. With this temperature everything should be kept on the dry side, and no harm whatever will result; in fact the majority of the plants seem to revel in such conditions. Provided that no more fire heat is used than is necessary to maintain these temperatures, very little or no air need be put on, as sufficient will come through the chinks and crevices to keep the atmosphere pure and sweet.

WATERING.—To keep the plants healthy and plump, a watering at the root may take place about once or twice a week, but the compost need not be absolutely saturated, or a lóng time will elapse before it again dries. I prefer what is termed surface watering for the winter; enough then is taken in to fully sustain vigour, without rotting the roots. The system of thoroughly soaking is not good practice for the winter. On days when no

watering takes place, it is well to put a little moisture about the floors once a day for evaporation. Newly imported plants not yet potted up, or plants on blocks, should be moistened oftener than pots of compost. If the plants are perfectly sound and vigorous—which they are sure to be if the house is one which dries up pretty quickly—they may be syringed overhead, if done during the morning, and lukewarm water is used, and no damping off will take place, even at this time of year, not even with the new growth of Dendrobiums. Plants grow all the better when this bold treatment can be given. Whether it is advisable to wet over-head or not, can only be judged by the one who has the management of the house, for various houses produce various conditions, and what is suitable for one may not be so for another. What I want is to advise amateurs to work upon the syringing system when watering, if possible, for it is the life and soul of the plants. There is something natural about it. It is like a shower of rain coming just when it is wanted. It is also a quick, easy, and clean way of watering. A man might water a whole house full with a syringe while he is watering half a dozen with a pot. Be careful, however, to use lukewarm water. Those in bloom may be wetted just the same as others: the flowers will not spot, but are refreshed equally as much as the foliage. The idea that Orchids necessarily damp if water touches the leaves or flowers is absurd, and out of date.

Cool Orchids.—In conclusion, under this heading, I beg to give amateurs and beginners a word of advice, and to point out a mistake which is often made when they are commencing to grow Orchids. They desire to grow Orchids, and naturally think that they may be grown in their green-house, with their varied collection of half hardy plants, with no extra cost for increased warmth. But the term "Cool Orchids" is an elastic one. There are many so-called cool Orchids, but the question is, can they be successfully grown in an ordinary green-house under conditions which suffice for half hardy plants? The answer is, No! They may not die, they may even grow, but rarely do they increase in size, or make satisfactorily plants. Their failure is not so much due to an insufficiency of heat, as to the aridity of the atmosphere—too much air at times, or too much sun. It should be borne in mind that Orchids, though fond of fresh pure air, are also fond of moisture and shade to a reasonable extent. They also require a regular and somewhat evenly balanced temperature, and that is seldom found in an ordinary greenhouse. Better companions for cool Orchids, if we consider the year throughout, are ferns and the warmer kinds of greenhouse plants such as Palms, cool-growing Dracænas, Aralias, Bougainvilleas, Clerodendrons, Streptocarpus, &c. In fact I have previously stated that Cool and Intermediate Orchids may be all grown together in one house, the only difference being in the summer treatment, which I will further explain hereafter.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE first meeting of the year was held at the Drill Hall, James Street, Westminster, on January 9th, when there was an exceptionally good display of Orchids for the season. The members of the Committee were H. J. Veitch, Esq., in the chair, and Messrs. T. W. Bond, H. J. Chapman, J. Colman, De B. Crawshay, J. Douglas, J. G. Fowler, J. T. Gabriel, H. Little, H. T. Pitt, F. Sander, W. H. White, W. H. Young, and J. O'Brien (hon. sec.).

Fig. 8. PAPHIOPEDILUM INSIGNE VAR. "ODDITY."

Exhibited by W. M. Appleton, Esq., at the R.H.S. Meeting, on December 19th last. (See Report at p. 28 of our last issue ; also vol. iii, p. 361 for a full account of the plant.)

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a very interesting group, including Calanthe × porphyrea, C. × Phœbe, light rosy lilac, C. × revertens splendens, and a pretty rose coloured form called C. × Limatodes, a cross between C. ×

Veitchii, and one of its original parents, C. rosea, which it most resembles, except in being larger and darker in colour. The group also included Platyclinis uncata, Cypripedium × Fascinator, Mormodes buccinator Warscewiczii, bright yellow, and a rich red-brown form called M. b. Rolfei (Botanical Certificate); also the handsome Lælia anceps Leeana (Award of Merit).

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), staged a very fine group, which gained a Silver Flora Medal. It contained a beautiful series of cut spikes of Phalænopsis, including P. amabilis, Aphrodite, Sanderiana and the fine Wigan's var., Schilleriana, Stuartiana, × leucorrhoda and var. casta, some being in quantity. Other fine things were Lælia × Gouldiana with a six-flowered spike, L. albida, Cattleya Lueddemanniana, several fine Cypripediums, including one called C. × Marjorie (Leeanum superbum × insigne sylhetense, cut spikes of Pleurothallis Roezlii. *Zygocolax* × Wiganiana (*Z.* intermedium × C. jugosus) and *Z.*-c. × leopardinus Wigan's var. (*Z.* maxillare Gautieri × C. jugosus) each received an Award of Merit.

R. W. Rickards, Esq., The Priory, Usk, Mon. (gr. Mr. Murrell), received a Silver Banksian Medal for a good group, including some finely grown Odontoglossum Rossii, O. crispum with six-branched spike, O. × Andersonianum, Oncidium Forbesii, a magnificent plant of Cypripedium bellatulum Usk Priory var. with three flowers (Cultural Commendation), and a showy form of C. insigne.

W. M. Appleton, Esq., Weston-super-Mare, received a First-class Certificate for Cypripedium × Sir Redvers Buller (Smithii × insigne), a very large and handsome hybrid.

J. T. Bennett-Poe, Esq., Holmewood, Cheshunt, (gr. Mr. Downes), sent a good plant of Dendrobium spectabile.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent Calanthe × atrorubens (Wm. Murray × Oakwood Ruby), a very fine and richly coloured hybrid.

Earl Brownlow, Ashbridge, Berkhamstead (gr. Mr. Low), showed a fine Cypripedium × Leeanum with upwards of twenty-five flowers.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent a good Cattleya Percivaliana, Cypripedium × Lathamianum, C. × Hera Euryades, and a delicately tinted hybrid derived from C. Godseffianum × hirsutissimum.

Sir W. Marriott, Down House, Blandford (gr. Mr. Denny), sent a pretty form of Sophrolælia × Marriottiana, in which the yellow flowers were prettily flaked with orange-scarlet.

G. W. Law-Schofield, Esq., New Hall, Hey, Rawtenstall (gr. Mr. Shill), sent Cypripedium × Leeanum grandisepalum, remarkable for having the

lower sepal developed like the dorsal, and C. × L. rubrum, having fine red-brown blotches on the dorsal sepal.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, showed the interesting Lælia Jongheana.

Messrs. Hugh Low & Co., Bush Hill Park, staged a small group of good things which received a Silver Banksian Medal. It contained three fine forms of Cymbidium Tracyanum, the handsome Lælia × Gouldiana, two good Cycnoches chlorochilon, Cypripedium × Alcides, C. insigne Laura Kimball, and other good things.

Mr. J. Douglas, Edenside, Great Bookham, showed the pretty Lælia × Briseis.

Messrs. Heath & Son, Cheltenham, showed Cypripedium × Leeanum viride.

Mr. Edward Kromer, Roraima Nursery, Bandon Hill, showed a good plant of Brassavola grandiflora.

Messrs. Linden, L'Horticulture Coloniale, Brussels, sent pretty forms of Odontoglossum crispum and O. × Adrianæ, and fine forms of Cypripedium Lawrenceanum and C. × Gowerianum.

Messrs. B. S. Williams & Son, Upper Holloway, staged a good group of the showy Cypripediums of the season, including a pretty hybrid between C. Boxallii and C. × Harrisianum superbum.

At the meeting held on January 23rd, there was again a very fine display, and three First-class Certificates were awarded. The Members of the Committee present were:—J. Gurney Fowler, Esq., in the Chair, and Messrs. H. J. Chapman, J. Colman, De B. Crawshay, J. Douglas, J. T. Gabriel, T. B. Haywood, E. Hill, A. Hislop, H. T. Pitt, F. Sander, F. J. Thorne, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (hon. secretary.)

Sir Trevor Lawrence again staged several interesting plants, including the pure white Calanthe Regnieri hololeuca (Award of Merit), Dendrobium × Cordelia, D. × burfordiense, D. × melanodiscus Rainbow, Epidendrum amplexicaule, Cypripedium × Leeanum Albertianum, and C. × Sallieri Hyeanum. Maxillaria arachnites, M. leptosepala and Tainia penangiana each received a Botanical Certificate.

N. C. Cookson, Esq., received a First-class Certificate for Cypripedium × Sanderiano-Curtisii (Curtisii ♀ × Sanderianum ♂), a very handsome hybrid.

Sir Frederick Wigan staged a very handsome group, to which a Silver-gilt Flora Medal was given. It contained about twenty-five spikes of Phalænopsis Schilleriana, P. S. vestalis, P. amabilis, P. Aphrodite, P. Stuartiana, Dendrobium atroviolaceum with eighteen spikes, D. × Ainsworthii Leechianum, Lælia autumnalis atrorubens, L. crispilabia,

Aerides Vandarum with eleven flowers, Oncidium Warscewiczii, Masdevallia × Pourbaixii, Vanda lamellata, the handsome Lælio-cattleya × callistoglossa Princess of Wales (Award of Merit), and a few good Cypripediums.

H. S. Leon, Esq., Bletchley Park (gr. Mr. A. Hislop) received an Award of Merit for Lælio-cattleya × Fanny Leon (L.-c. × exoniensis × C. labiata), with rosy lilac sepals and petals, and a richly coloured lip.

J. T. Bennett-Poe, Esq., showed a superbly-grown plant of Lælia anceps Sanderiana, bearing four spikes with an aggregate of nineteen flowers (Cultural Commendation).

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), showed a magnificent spike of Odontoglossum crispum, some $3\frac{1}{2}$ feet long, with three side branches and an aggregate of thirty-seven fine flowers. It has been in the collection for seventeen years (Cultural Commendation).

Baron Sir H. Schröder, The Dell, Staines (gr. Mr. Ballantine), sent a magnificent branched spike of Odontoglossum × Densonæ Schrœderianum, bearing white flowers heavily blotched with purple.

W. P. Burkinshaw, Esq., Hesslé, Hull (gr. Mr. Burkinshaw), sent a handsome form of Cypripedium × nitens, called Hessle var., and C. × Hera punctatum.

De B. Crawshay, Esq., showed four good forms of Odontoglossum Rossii.

Sir William Marriott sent a beautiful form of Odontoglossum crispum with some orange-coloured spots on the lip.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Morris), sent a good form of Cattleya Percivaliana, Cypripedium × Beeckmanni in fine condition, and another handsome hybrid.

G. W. Law-Schofield, Esq., sent Cypripedium × nitens albens.

R. G. Thwaites, Esq., Christchurch Road, Streatham, showed Dendrobium × Galatea, a pretty hybrid derived from D. Moniliforme × Rolfeæ roseum.

Messrs. James Veitch and Sons, Chelsea, staged a fine group, including Dendrobium × Wardiano-japonicum, D. × Cassiope, D. atroviolaceum, D. Findlayanum, D. × dulce, D. × euosmum leucopterum, the new Phalænopsis × Hymen (Mannii ♀ × Lueddemanniana ♂), Cypripedium Carnusianum, C. × Leonidas, and many other fine forms. Epidendrum × Wallisio-ciliare superbum is a handsome form which received a First-class Certificate, while Lælia × Mrs. Gratrix superba and Cypripedium × Actens langleyense each gained an Award of Merit.

Messrs. Charlesworth and Co., Heaton, Bradford, sent the handsome Cypripedium × Cowleyanum magnificum, Lælio-cattleya × Cappei, and two other beautiful things, each of which received an Award of Merit.

These were L.-c. × Sunray (L. cinnabarina ♀ × C. superba ♂) and L.-c. × Charlesworthii (L. cinnabarina ♀ × C. Dowiana aurea ♂).

Messrs. Hugh Low and Co. sent Dendrobium × Vannerianum, two good Cymbidium Tracyanum, the handsome Phalænopsis × Schilleriano-Stuartiana (First-class Certificate), and P. × intermedia Brymeriana (Award of Merit).

Messrs. F. Sander and Co., St. Albans, showed a finely flowered example of Dendrobium atroviolaceum, and the new and pretty D. Madonnæ (Rolfe), the latter receiving a Botanical Certificate.

Messrs. Stanley Mobbs and Ashton, Southgate, sent Cattleya Lueddemanniana Abnor Hassal, a pretty form with some dark rose markings on the petals.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

THE first meeting of the year was held at the Coal Exchange, Manchester, on January 11th, 1900, when an interesting lot of Orchids appeared. The members of the committee present were:—Messrs. W. Thompson (in the chair), Lovell, Bolton, Baxter, Parker, Stevens, Johnson, and Weathers (hon. sec.).

Thomas Statter, Esq., Stand Hall (gr. Mr. Johnson), showed Cypripedium × Charles Canham, C. × Morganiæ, C. × Leeanum Albertianum (A.M.) and C. insigne Harefield variety (F.C.C.).

W. Thompson, Esq., Walton Grange (gr. Mr. Stevens), showed a very large pan of Masdevallia tovarensis, Odontoglossum crispum Stella (Cultural Cert.), O. × Andersonianum, O. Hunnewellianum superbum (A.M.), and a well grown plant of the beautiful Lælia × Gouldiana (Cult. Cert.).

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed Odontoglossum crispum Papillon (A.M.), O. × Adrianæ ornatum (F.C.C.), Cypripedium Lawrenceanum splendens (A.M.), C. × J. Howes, (Sallieri × villosum aureum), C. × Leeanum, C. × Lathamianum inversum, and a nearly white form of Cattleya Trianæ.

W. Grimble Groves, Esq., Windermere (gr. Mr. Robertshaw), showed Cypripedium × Swinburnei magnificum (A.M.), and C. × nitens magnificum.

T. Baxter, Esq., Morecambe (gr. Mr. Roberts), showed a fine specimen of Dendrobium aureum (heterocarpum) loaded with flowers (Cult. Cert.), Odontoglossum × Wilckeanum of good form (A.M.), O. × loochristiense (F.C.C.), and other good varieties of Odontoglossum. A Silver Medal was awarded to the group.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), showed Cypripedium × Lathamianum aureo-giganteum, C. × Fascinator, C. × Madame Jules Hye, C. × Ashburtonæ expansum, C. × Leeanum magnificum, C. insigne Berryanum (A.M.), and C. i. Marion.

Edwin Stanley Clarke, Esq., Wrexham (gr. Mr. Edwards), showed a form of Cypripedium insigne with the spots suffused.

Richard Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed the beautiful and rare Cypripedium venustum Measuresianum (F.C.C.), C. insigne Sanderianum and C. × Lathamianum giganteum.

E. Bostock, Esq., Stafford (gr. Mr. Gill), showed Cypripedium × Lilian Greenwood (F.C.C.), and a form of C. × nitens called C. Colin (insigne albo-marginatum × villosum aureum), which gained an Award of Merit.

T. W. Swinburne, Esq., Winchcombe, showed Lælia Jongheana (A.M.).

Messrs. Backhouse and Son, York, showed Odontoglossum × crispo-Harryanum (F.C.C.).

Messrs. Charlesworth and Co., Bradford, showed Lælia anceps alba.

Mr. John Robson, Altrincham, showed Lycaste lanipes (A.M.).

NOTES.

MEETINGS of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on February the 1st and 22nd, when the Orchid Committee will meet at the usual hour, twelve o'clock noon.

The Royal Horticultural Society will also hold meetings at the Drill Hall, James Street, Westminster, on February 13th and 27th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

Paphiopedilum × barbato-Charlesworthii has improved considerably since it was described at page 48 of our last volume, as is evident from a flower sent from the collection of W. H. Lumsden, Esq., Balmedie, Aberdeenshire, by Mr. G. W. Cummins. The dorsal sepal is now two inches broad, deep rose-purple at the base, and beautifully reticulated with a rather lighter colour on a white ground on the upper half and margin. The petals, lip, and staminode rather incline towards P. barbatum in character, and are very prettily suffused with purple. It is a charming little plant.

Mr. Cummins, we are sorry to learn, is leaving Balmedie, and hopes to meet with an engagement in the south, as he finds the northern climate very trying during winter and spring. His abilities are well known, and we hope that he will soon meet with a suitable engagement.

A flower of the superb Paphiopedilum × nitens magnificum comes from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury. It came from the collection of G. Shorland Ball, Esq., and received a First-class Certificate from the Manchester Orchid Society last January.

A fine example of two flowers of Odontoglossum grande fused together comes from the collection of H. J. Ross, Esq., Florence, Italy; also a curiously malformed flower of Cattleya labiata from the collection of W. A. Evans, Esq., of Leicester. In the latter case the two petals have become fused with the column, which itself is abnormal. Such forms, if not beautiful, are often interesting on account of the light they throw on the structure of an Orchid flower.

A flower of the pretty little Dendrobium × Gemma is sent by Mr. A. J. Keeling, of Bingley, Yorks. It may be rememdered that it was raised in the collection of C. Winn, Esq., of Birmingham, from D. aureum ♀ and D. superbum Huttoni ♂, and was described at page 73 of our second volume. Mr. Keeling now adds that only one plant was raised, which went to the late Major Mason, at whose sale he purchased it. The flowers are ivory white with a pretty feathered blotch of light rosy maroon on the lip.

A twin-flowered scrape of Paphiopedilum × Niobe is sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool, and the rarity of the occurrence with this beautiful hybrid makes the fact worth recording. The plant bears five other flowers, and is exidently a strong and well grown example.

THE HYBRIDIST.

LÆLIO-CATTLEYA × BLETCHLEYENSIS.

A FINE hybrid derived from Lælia tenebrosa ♀ and Cattleya × Warscewiczii ♂ was exhibited at a meeting of the R. H. S. by H. S. Leon, Esq., Blechley Park, Bucks., under the above name. A superb flower having the same parentage has now been sent by M. Ch. Vuylsteke, Loochristi, Ghent. It is most like the Lælia shape, but the petals are much broader and the lip is fairly intermediate in character. The sepals and petals are of a brilliant rose-purple, and the lip is several shades darker, especially in the throat, which has a zone of almost blackish-violet, as in the seed bearer. The yellow blotches of the Cattleya parent are totally obliterated. It may be compared with a large and richly coloured form of the natural hybrid, L.-c. × Gottoiana (which is clearly derived from L. tenebrosa and C. Warneri), and is the finest tenebrosa hybrid which we have yet seen.

ORCHID PORTRAITS.

ACINETA HUMBOLDTII.—*Le Jardin*, xiv., pp. 23, 24, fig. 9, 10.

CATTLEYA TRIANÆ VAR. CANDIDULA.—*Lindenia*, t. 677, fig. 2. Var. latissima.—*l.c.*, fig. 3. Var. platychila.—*l.c.*, fig. 1.

CORYANTHES MACRANTHA, HOOK.—*Bot. Mag.*, t. 7692.

CYPRIPEDIUM × DEEDMANIANUM.—*Amer. Gard.* xx., p. 874, fig. 218.

CYPRIPEDIUM × LEEANUM.—*Amer. Gard.* xx. p. 874, fig. 219.

CYPRIPEDIUM × LORD ROBERTS.—*Gard. Mag.*, 1900, p. 20, with fig.

CYPRIPEDIUM × SIR REDVERS BULLER.—*Journ. of Hort.*, 1900, xl., p. 45, fig. 9; *Gard. Chron.*, 1900, xxvii., pp. 35, 43, fig. 13; *Gard. Mag.*, 1900, p. 37, with fig.

DENDROBIUM SPECTABILE, Miq.—*Gard. Mag.*, 1900, pp. 52, 53, with fig.

LÆLIA ANCEPS CRAWSHAYANA.—*Journ. of Hort.*, 1900, xl., p. 67, fig. 14.

MASDEVALLIA HARRYANA GRAVESIÆ.—*Amer. Gard.*, xx., p. 895, fig. 220.

ODONTOGLOSSUM × ASPERSUM VAR. BOSSCHERIANUM, L. Lind.—*Lindenia*, t. 679.

ODONTOGLOSSUM CRISPUM DAPHNE.—*Journ. of Hort.*, 1900, xl., p. 66, fig. 13.

PERISTERIA ELATA, Hook.—*Lindenia*, t. 680.

PHALÆNOPSIS SANDERIANA, WIGAN'S VAR.—*Garden*, 1900, lvii., p. 44, with fig.

RENANTHERA LOWII (specimen plant).—*Gard. Chron.*, 1900, xxvii., pp. 2, 3, fig. 1.

SOBRALIA XANTHOLEUCA, Rchb. f.—*Lindenia*, t. 678.

SOPHRO-CATTLEYA × CALYPSO.—*Journ. of Hort.*, 1900, xl., p. 15, fig. 3.

ZYGOPETALUM MYSTACINUM, Rchb. f.—*Gard. Chron.*, 1900, xxvii., p. 50, fig. 14.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

G.B., Hamburg. Lycaste cruenta.

A. D. Flower of oncidium spilopterum, much shrivelled, but seems to be a case of two flowers fused in one.

R. H. M., H. J. R., R. Y., and others. Flowers received with thanks, but must stand over till next month.

J. M. Lælia anceps Sanderiana.

W. C. Cattleya Trianæ delicata. A good form but small: wants cultivating.

Photograph received, with thanks. C.P.; J.E.R., next month.

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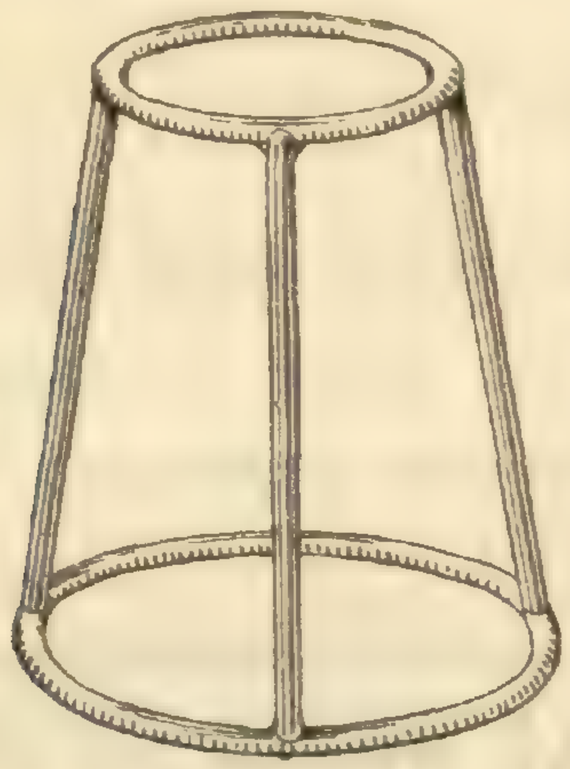

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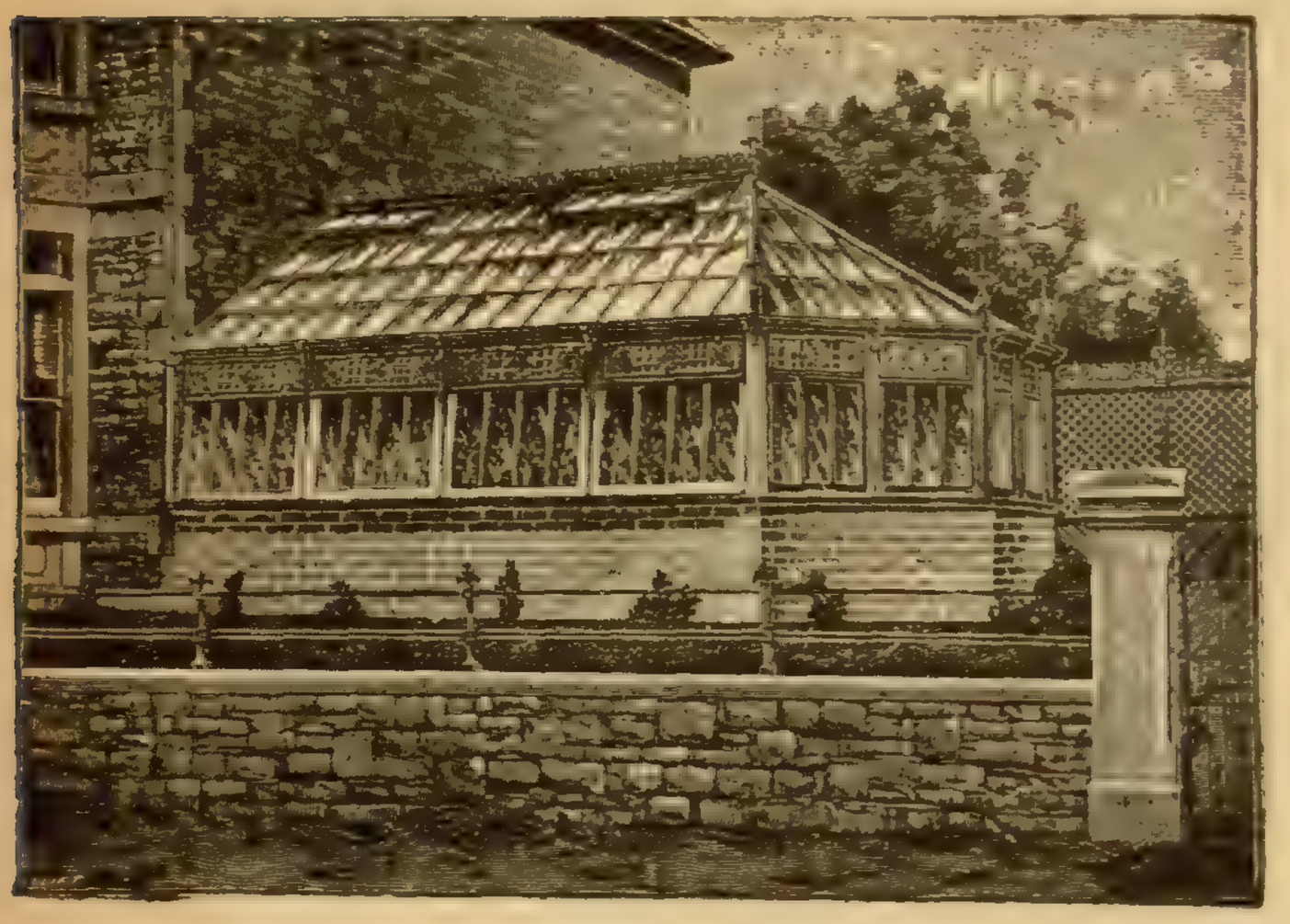

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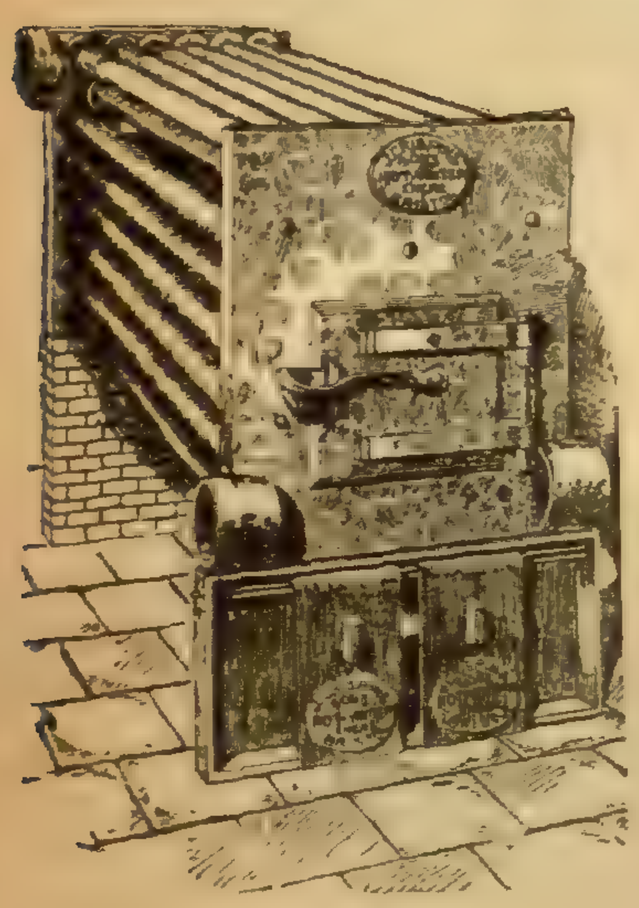

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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DIES ORCHIDIANÆ.

I HAVE now seen several good plants of the pretty little Lælia Jongheana in flower, which reminds me of the cutting sent by a correspondent some time ago, to the effect that the flowers were "borne two to five on stout spikes" (see page 261 of our last volume). All those that I have seen bore solitary flowers, and although twin-flowered scapes may be expected, when the plants become strong—as in the allied L. pumila—I do not yet see any evidence of the larger number mentioned, and those who wish me to credit the story will, perhaps, send along the old flower-scapes as a voucher. Nor should I call the colour always "brilliant amethyst," but, frequently, light purple, though some forms are darker than others, and I am told that even a white form is anticipated.

One or two growers have expressed themselves as rather disappointed with it, but they must remember that it has not yet had time to establish itself. On the whole, I think it will prove a valuable acquisition, both on its own account and for hybridisation purposes, for its dwarf habit promises to make it as useful as is Lælia pumila, while the large flower and orange-yellow throat are distinctive characteristics which should give it an increased value. Time, of course, will tell, but this opinion is not all pure speculation, for already we have a hybrid from it which has gained a First-class Certificate, namely, the beautiful Lælio-cattleya × Baroness Schröder, of which it was the pollen parent. As Cattleya Trianæ is now in flower, there will be an opportunity for raising more examples of this hitherto unique hybrid.

It is very interesting to have such a complete account of Paphiopedilum Fairrieanum and its hybrids as that which appeared in the two preceding issues of this work. Will history repeat itself in the case of this species

also? And, if not, can we ever expect to see it common in collections? It would be interesting to know how M. Opoix grew those four charming examples which were exhibited at Paris in October last (p. 40), and I wonder how long it would take him to work up a stock from them. The great difficulty with the plant seems to be to know how to increase it. It can be grown—that at all events is certain, or it must have been lost long ago, and if grown, why not increased, like other species? And will not M. Opoix risk one of his plants by an attempt to obtain a capsule of true seed? If this could be obtained, surely so successful a grower could succeed in getting it to germinate.

A curious suggestion was also thrown out as to the possibility of obtaining P. Fairrieanum from one of its hybrids by repeated crosses with Farrieanum pollen—always supposing that it could be obtained. The idea seems feasible, and I believe that something of the kind has been done in another group. In fact, I seem to remember reading somewhere that in this way one species could be bred from another in seven or eight generations. Someone might start with P. × Arthurianum, (the first generation from insigne), and by continued crossings with Fairrieanum pollen might in time obtain the much-desired species itself. Theoretically, there seems to be several possible ways of increasing the species, and I can only hope that someone will put one of them into practice.

A curious point is raised by a correspondent respecting a seedling exhibited at the meeting of the Manchester Orchid Society on February 1st. The *Gardeners' Chronicle* report states:—"Another good Cypripedium hybrid was C. × Leeanum giganteum × C. Bruno, the latter parent being a cross between C. Spicerianum × C. Leeanum. When dissected, the parentage of this hybrid is seen to be very mixed, but the result is satisfactory (An Award of Merit)." Commenting on this plant being recorded without a name, my correspondent remarks:—"This may not be the fault of the reporter, but surely a name is desirable for a certificated plant." But the question is, What name? It seems to me that this seedling after all contains nothing but the blood of C. insigne and C. Spicerianum, though in slightly different proportions from the original × Leeanum. The original cross was half Spicerianum, the second cross raised the proportion to three-quarters, and now the third cross reduces it again to five-eighths Spicerianum. One might go on crossing and re-crossing with the original parents and hybrids until one had a complete series of gradations between the two original species, and it is a rather nice point whether all would not be forms of × Leeanum.

This question of the naming of hybrids is interminable, and it seems to me that the parentage in certain groups is getting so much mixed that a good many of those which appear are not worth naming at all. If only those were named which were intrinsically good, or which showed some improvement on existing kinds, how much fewer would the new names be than under the existing system. Of course, they seldom show their true character at the first time of flowering, and, until they do so, some provisional system of identification seems necessary. I recently came across the record and figure of a very handsome novelty as "Carnation no. 666," and it seems to me that a system of numbers would serve very well as a provisional arrangement, to be prefixed with the name of the raiser in the event of their being exhibited or recorded. Any which proved of sufficient merit might be named afterwards.

For primary hybrids, *i.e.*, those between distinct species, we have already a good working rule, but for secondary hybrids—often of much mixed parentage—which are named as florists' flowers, something of the kind seems both desirable and necessary.

ARGUS.

ONCIDIUM PANCHRYSUM.

A PLANT of this very pretty little Oncidium has appeared in the collection of William Thompson, Esq., Walton Grange, Stone, among some imported plants of Odontoglossum Pescatorei and O. triumphans. It closely resembles O. auriferum, Rchb. f., but is readily distinguished by the total absence of column wings which are so marked a feature in that species. It was originally described by Lindley, in 1849 (*Journ. Hort. Soc.*, iv., p. 267, with fig.), being primarily based on specimens collected in the province of Socorro, New Grenada, by Linden; the author, however, adding that he had "received flowers from various anonymous correspondents." Reichenbach also described it as O. anomalum (*Linnæa*, xxii, p. 845) from specimens collected by Funck and Schlim at 8,000 feet elevation in the province of Pomplona. He also claims priority for this name, but there is evidence that it was not published till after Lindley's, and therefore we adopt the former. It is a dwarf and most floriferous little species, the panicle reaching about a foot high, or rather less when not fully developed, and bearing numerous bright yellow flowers. Mr. Stevens remarks that it grows well with the Odontoglossums. The only other plant which we know of in cultivation is in the collection of Sir Trevor Lawrence, at Burford.

R. A. R.

THE GENUS PESCATOREA.

(*Concluded from page 46.*)

OUR preceding paper showed an aggregate of fifteen species, but an additional one has since been recognised, having hitherto been located in the allied genus Bollea, to which, however, it does not belong, as a glance at the column will show.

9 *a*. PESCATOREA SCHRŒDERIANA (Bollea Schrœderiana, Sander, *Gard. Chron.*, 1895, xvii., pp. 401, 497, fig. 70; *Orch. Rev.*, iii., p. 158; *Journ. of Hort.*, 1895, xxx., p. 287, fig, 50; *Gard. Mag.*, 1895, p. 199, with fig.; *Garden*, 1896, lv., p. 486, t. 1072; *Wien. Ill. Gart. Zeit.*, 1897, p. 393, t. 4).—This handsome species was introduced by Messrs. F. Sander & Co., St. Albans, and received a First-class Certificate from the Royal Horticultural Society in March, 1895, the plant exhibited bearing nine flowers, which are described as very fragrant. The sepals and petals are white, and the lip light purple, smooth, and rather narrow, with a pair of diverging apical lobes, which latter locates the species near P. Roezlii, or P. euglossa, if the latter is really distinct—a point which cannot be decided in the absence of an authentic specimen.

We have now to consider the two plants mentioned at the commencement of this article, as having been exhibited by Frau Ida Brandt, of Zurich, at a meeting of the Royal Horticultural Society on November 21st last, to which meeting they had been sent for determination.

One of them was shortly afterwards figured under the name of Zygopetalum Gairianum in the *Gardeners' Chronicle* (1899, xxvi., p. 401, fig. 129), where Mr. J. O'Brien, alluding to Mr. Gair's original plant, described in 1879, remarks:—"But little has been heard of the species since until now, when a flower and photo of a plant received from Consul F. C. Lehmann, and which evidently is the same thing, is kindly sent by Frau Ida Brandt," &c. A comparison with the original descriptions however, reveals several discrepancies, and Reichenbach distinctly states that Mr. Gair's plant belongs to the "Asperilingues," while the lip of the present one is nearly, if not quite, smooth. From a comparison of the living flower and painting, I should refer the latter to P. bella, which Reichenbach thought was a hybrid between Bollea cœlestis and some Pescatorea. And Mrs. Brandt wrote me, quite independently:—"My idea is that this so-called Pescatorea Gairiana is a natural hybrid between Bollea cœlestis and Pescatorea Klabochorum." She also states that it was received "a year and a half before, from Consul Lehmann, as P. Klabochorum." This idea is quite in accordance with the character of the plant. Bollea cœlestis is written large all over it, and the column is quite intermediate between the broad, cucullate one of the former and the narrow one of the latter.

The basal halves of the sepals and petals are light violet-purple, and the upper halves very deep violet-purple, the latter character being just what would be expected if P. Klabochorum were the other parent. A question remains as to whether P. Gairiana may not be another form of the same hybrid. It was bought by Mr. Gair as Bollea cœlestis, and appears to have passed as such until it flowered. We all know how hybrids vary, and the resemblance in colour is too great to be overlooked. The hairy lip is not a very strong objection, for some individuals might retain more of the hairy character of the Pescatorea parent, while others resembled the Bollea in being smooth. Is the original plant still alive, or does anyone possess a drawing of it?

Mrs. Brandt's other plant, Pescatorea Dayana splendens, so-called, was also received from Consul Lehmann as P. Klabochorum, but is quite distinct from all others in having a cochleate, very hairy lip, and has been described as a new species under the name of P. cochlearis, Rolfe. Neither of the characters mentioned are in accord with P. Dayana, and it is also very different from P. Klabochorum. A hybrid between the two would hardly produce such a lip, and, of course, there is not the slightest resemblance to Bollea cœlestis or the preceding hybrid. The flower much resembles P. Dayana in size, the ground colour being white, with the apical third of the sepals and petals rich red-purple, and the lip somewhat marked with the same colour. It is evident that we have still much to learn about the group.

In conclusion. a word may be said about the generic name. Pescatorea was originally described as a distinct genus by Reichenbach, but was afterwards reduced by him, together with several of Lindley's genera, to Zygopetalum, in which course he was followed by Bentham. But several other genera, which were allowed to remain, possess no more distinctive character, and of these Aganisia and Chondrorhyncha may be cited as examples, yet any fresh additions only add to the difficulty of distinguishing the combined genus, and the best course seems to be to revert to the original arrangement.

R. A. Rolfe.

DENDROBIUM WARDIANUM.

I should feel obliged if some of your readers would give the largest number of flowers they have upon a single growth of Dendrobium Wardianum. I have a growth here which has thirty-four perfect flowers upon it, which I must say is very pretty. I do not remember to have had such a free flowering growth before, the average number, upon a single bulb, being from twelve to twenty.

Ludlow. J. Godfrey.

ORCHIDS IN SEASON.

DENDROBIUMS are the Orchids *par excellence* of the present season, and a beautiful series has been sent from the establishment of Mr. James Cypher, of Cheltenham, where these plants have long been particularly well grown. It includes some good forms of D. nobile and D. × Ainsworthii, the latter name being used in the broad sense, as covering all the hybrids between D. nobile and D. aureum, and thus including many very beautiful varieties, some of which have received distinctive names, as splendidissimum and Leechianum, which are superb. D. × A. Leeanum (formerly called D. × splendidissimum Leeanum), according to the example sent, is not quite so large but has rather more colour, in fact it is rather nearer D. nobile in general character. D. × A. Cypheri, however, must receive the palm for richness of colour, the inflorescence sent being a considerable advance on the variety roseum, in this respect being equal to a rosy purple D. nobile, but with the typical Ainsworthii shape and feathered blotch, the rest of the lip being as richly coloured as the sepals and petals. One or two other well-known kinds are also enclosed.

Lælia anceps is also flowering finely in the establishment, and a six-flowered raceme of L. a. Sanderiana is sent as an example. Mr. Cypher remarks that he had 420 blooms of different white forms at the time this was cut, which we can believe formed a most beautiful sight, and owing to the length of the scapes, it is one of those Orchids which looks most effective when flowering in quantity. Other beautiful Orchids sent include a very fine truss of Epidendrum xanthinum, and good forms of Paphiopedilum insigne, × nitens Sallieri, and × Ceres.

Several beautiful Orchids are sent from the collection of T. Baxter, Esq., of Morecambe, by Mr. Roberts. They include different forms of Odontoglossum crispum and × Andersonianum, Oncidium Cavendishianum, the beautiful Phalænopsis Schilleriana, Dendrobium Wardianum, Findlayanum, × Rolfeæ, × Desdemona, and the remarkably fringed D. Brymerianum, Saccolabium bellinum, and two good forms of Cattleya Trianæ, one of which has pretty rose-pink sepals and petals, and a bright carmine lip, with a pale disc and on ly a trace of yellow.

A series of half a dozen forms of Paphiopedilum insigne, from the collection of D. Grimsdale, Esq., of Uxbridge, shows a large amount of variation in the amount of spotting on the dorsal sepal, and also the utility of the species for cut flowers. Whether any of them agree with specially named varieties we cannot say, though we do not recognize them as such.

Two very distinct flowers of Odontoglossum × Andersonianum are sent from the collection of J. F. Laycock, Esq., of Wiseton, Bawtry, Notts., by Mr. Lamb, one having a white ground and the spots almost absent from

the petals, but numerous on the sepals; the other being light yellow and more regularly spotted. They appeared among imported O. crispum, and both are good. A fine flower of O. Rossii rubescens, which flowered out of a recent importation, is also sent. The petals and lip are prettily suffused with rosy lilac.

A fine form of Odontoglossum gloriosum is sent from the collection of E. F. Clark, Esq., of Teignmouth, together with a good typical O. crispum, The former is richly marked and very fragrant. We have not yet heard of anyone crossing these two species together successfully, but it would be very interesting to see an Odontoglossum × Andersonianum raised artificially, and, if specially fine forms of the parents were selected, the experiment might be justified floriculturally.

A good dark form of Odontoglossum sceptrum is sent from the collection of William Thompson, Esq., of Stone, together with the beautiful Odontoglossum × Adrianæ Lady Roberts, which gained an Award of Merit at the last meeting of the Manchester Orchid Society. The latter is a beautiful, light yellow form, of good size and shape, with brown blotches on the sepals and spots on the petals.

THE HYBRIDIST.

Dendrobium × Ethel.

This is a very pretty little hybrid raised by the late Major-General Berkeley from D. moniliforme (japonicum) ♀ and D. × Rolfeæ roseum ♂, which received an Award of Merit from the Manchester Orchid Society on February 1st last, the exhibitor being Mr. James Cypher, of Cheltenham, from whom we have received a raceme. The pollen parent is believed to be a natural hybrid between D. primulinum and D. nobile, and has been figured in these pages (vol. ii., p. 113, fig. 10), and if this view be correct it serves to explain the resemblance which the novelty bears to D. × Cassiope, the only difference being that instead of being half nobile blood, as in the latter, we have nobile ¼ and primulinum ¼. The purple blotch is smaller and lighter in colour than in D. × Cassiope, being confined to a series of radiating lines near the base, while the sepals and petals are tipped with pink; the remainder being white. It is very floriferous, about six inches high at present, and the flowers are very fragrant.

Dendrobium × Vulcan.

This is a very promising hybrid raised in the collection of the Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham, by crossing D. × Juno with D. Wardianum. Mr. Smith, in sending a flower, states that the seedling has five bulbs, the latest being sixteen inches long, so that it approaches the latter parent in the length of the bulbs. The

previous one is nine inches long, and has now produced a fascicle of three flowers. D. × Juno being a seedling from D. Linawianum and D. Wardianum, the novelty should be three-fourths derived from the latter, though the flower is nearer the other parent in general character. The sepals and petals are prettily suffused with rose-purple at the apex, passing to white at the base, and the lip has a large maroon blotch on the disc, with a trace of yellow at the margin, and finally a white border with a rosy purple apex. It has scarcely yet shown its true character.

Paphiopedilum × Quinirius.

A curious little hybrid raised in the collection of Reginald Young, Esq., Sefton Park, Liverpool, by Mr. Poyntz, from P. Spicerianum ♀ and P. Appletonianum ♂. The dorsal sepal is almost a reduced example of the former, but more ovate in shape, and the petals are nearly flat and more like those of the latter. The staminode and lip are fairly intermediate. The seed was sown in March, 1892, and a single seedling appeared in January, 1893, and three or four more in January, 1896—a curiously long interval. The former has now flowered. As the pollen plant is rare in cultivation, we may add that a figure was given at page 17 of our fourth volume.

Paphiopedilum × Helios.

A hybrid derived from Paphiopedilum Curtisii and P. villosum—the latter being recorded as the pollen parent—which has just flowered in the collection of Reginald Young, Esq., of Sefton Park, Liverpool. It was obtained from Messrs. John Cowan and Co., of Gateacre, who themselves obtained it from some other source with the above record. It bears a considerable resemblance to P. × Harrisianum, especially in colour, but the dorsal sepal is rather smaller, more distinctly ovate, and the lip larger, just as would be expected when P. barbatum was replaced by P. Curtisii. The prevailing colour is a bright, shining brown, as in other hybrids between P. villosum and a member of the barbatum group. The shape is also good, and the plant seems to be a vigorous grower.

Cypripedium × maculatum.—Under this name is recorded a secondary hybrid raised in the establishment of Messrs. F. Sander and Co., from C. tonsum ♀ and C. × Leeanum ♂ (*Orch. Rev.*, iii., p. 32). The same cross has since been raised in the collection of Reginald Young, Esq., Sefton Park, Liverpool, and we have now received a flower, together with that of the two parents. It is unmistakably intermediate in character, but cannot well agree with the original, for there is scarcely a spot about the flower. Nor, unless it improves greatly, can it be called an acquisition, being inferior to P. × Leeanum in every respect. The dorsal sepal is suffused aud obscurely veined with light brown, except round the pale margin, and the petals and lip are suffused with a similar colour. Other seedlings of the same batch may not prove identical.

CATTLEYA INTERMEDIA VAR. AQUINII.

A FIGURE of the remarkable Cattleya intermedia var. Aquinii was given in a recent issue of the *Gardeners' Chronicle* (1900, xxvii, p. 83, fig. 25), and by the courtesy of the Editor of that journal we are able to reproduce the same, together with the accompanying note from the pen of Mr. Rolfe:—

"The accompanying illustration represents a very remarkable Orchid, which was described by M. Barbosa Rodrigues, Director of the Botanic Garden at Rio de Janeiro, in 1893, as Cattleya Aquinii (*Journ. des Orch.* iv., p. 144). The photograph, together with dried flowers and a coloured drawing, have been sent by Señor Graciano A. de Azambuja, of Porto Alegre, S. Brazil, in the belief that it will 'greatly interest many readers of

FIG. 9. CATTLEYA INTERMEDIA VAR. AQUINII.

the *Gardeners' Chronicle*, as a notable case of fixed peloria. All specimens which exist of this Cattleya have been taken from the one and only plant which was discovered here (at Porto Alegre, in the province of Rio Grande do Sul), many years ago by a Portuguese gardener named Valladares. The flowers are identical from year to year. I believe that the Cattleya sent to the botanical garden at Rio by Señor F. de Aquino was taken from this parent plant.' It has been figured by M. Rodrigues in his *Plantas Cultivadas no Jardim Botanico do Rio de Janeiro*, p. 23, t. 4, fig. C.

"Although originally described as a distinct species, it has long been known as a peloriate state of Cattleya intermedia, in which the petals are

lip-like in shape and colour (*Orch. Rev.*, i., p. 310; ii., p. 207). This peculiarity renders the variety very distinct, and the abnormal character cannot be considered a defect, as judged from the florist's standpoint, but rather as giving the flower an additional attractiveness. The character seems to be quite fixed, as in the case of Uropedium, and the double form of Epidendrum vitellinum. One other abnormal condition of this Cattleya is known, namely, C. intermedia var. prolifera, which was figured in 1887 (*Gard. Chron.*, ii., pp. 12, 13, fig. 3). An examination of one of the dried flowers mentioned above shows the cause of the peculiarity, the column being abnormal. It is well known that the pair of teeth or wings seen on the column of so many Orchids are staminodial in their origin—occasionally they revert to their original character, coming as perfect anthers—and in this case they seem to have partly or wholly wandered from their usual position, and have become united with the petals, thus giving them their partially lip-like character. In fact, the side-lobes of the lip were long ago recognised by Robert Brown as staminodial in their origin, and, though this view has sometimes been questioned, there can be little doubt that it is the correct one, as Lindley and Darwin also held. That the petals are not transformed into perfect lips is what might have been expected, for each petal has only the addition of a single staminode. These abnormal flowers are often interesting for the light they throw on the structure of an Orchid flower, but the present one is also handsome, and we may hope to see it yet under cultivation in Europe. *R. A. Rolfe.*"

FERTILITY OF PAPHIOPEDILUM FAIRRIEANUM HYBRIDS.

THE recent article in the ORCHID REVIEW regarding "Paphiopedilum Fairrieanum and its hybrids," reminds me of a rather singular experience we have been having with the hybrids from this little species, which may be of interest to some of your readers. During the past five years we have used the pollen from more than fifty blooms of these various hybrids, viz:— × Niobe, × Arthurianum, × vexillarium, × Amesiæ, × Ballentinei, and × Edwardi, and not one seed pod has developed from all these crosses. On the other hand, we have produced good seed from fertilizing × Arthurianum with × Leeanum and other hybrids, as well as from pollen of several species, while × vexillarium has also produced good seed, from pollen of various species and hybrids. We have made several attempts to produce fertile crosses on × Arthurianum, and on × vexillarium, with pollen of various other Fairrieanum hybrids, but so far have met with disappointment. It would be very interesting to hear from others who have experimented with these hybrids.

J. E. ROTHWELL.

THE STRUCTURE OF AN ORCHID LIP.

If a more direct proof were required of the compound nature of an Orchid lip than any which we at present possess, we might hope some day to see this organ replaced by an ordinary petal, with a pair of perfect anthers attached near the base, where the side lobes should be. Such an ideal example has not yet appeared. We have examples of Cattleya labiata in which the side lobes have reverted to perfect anthers, though in each case it has been when they wandered from their usual position, and became united with the column, which then became straight, with a perfect anther at each apical angle (*ante*, ii., p. 358; iii., p. 366).

A flower of Cattleya Trianæ from the collection of J. Wilson Potter, Esq., of Croydon, is instructive in another way, for it has three small but perfect lips, and their attachment shows clearly the cause of the peculiarity. They are united to each other and to the base of the column for about two lines, afterwards becoming free, and they are nearly equal in size, texture, and colour. The side lobes thus appear as free petaloid staminodes, and the front lobe is similar in character, not having reverted to a normal petal.

A flower of Paphiopedilum Spicerianum, from the collection of Mr. J. W. Moore, of Rawdon, near Leeds, has a somewhat different peculiarity. The lip is divided longitudinally into two halves, and the lateral sepals are free, while at their basal angle, and just exterior to them, is an additional bract-like body, from the axil of which appears a perfect bud attached to a short ovary. The latter character shows that the pedicel of a second flower has become completely adnate to the ovary of the lower one, right to its apex. The column of the flower is not quite normal, for in front of the stigma, which is reduced in size, is situated a petaloid staminode, opposite to the normal one, and this evidently represents the median stamen of the inner whorl. The two normal stamens complete the series of six, all of which are thus separately represented in one form or another.

The median stamen of the inner whorl is generally the most difficult to trace, and its position is not always understood. Robert Brown thought it was often represented in the crests of the labellum, while Darwin rather located it in the front of the column, if present, but could not trace it in the Cypripedium group (among others). In the example of Cattleya above mentioned, it evidently followed the same course as the lateral stamens of the outer whorl, being normally in the lip, but departing with them into the column when that organ had three perfect anthers, thus changing the lip into a normal petal. In the flower with three perfect lips it was evidently present in the middle one, and had not wandered into the column. The Paphiopedilum Spicerianum flower is equally instructive. In that case this particular stamen was represented as a petaloid staminode in front of the

column, and consequently was absent from the lip. The latter was divided to the base, but the inner margin of each half consisted of a band of petal-like tissue, not the stouter tissue which occupies this position in the normal lip, and of which the free side lobes were composed in this particular example. I therefore believe that the supposed missing stamen is normally confluent with the lip in this group, thus modifying its texture as compared with that of the petals. This explanation is in harmony with some other observed facts, and gives these abnormal flowers an interest which would otherwise frequently be lacking.

R. A. R.

PAPHIOPEDILUM × NITENS AS A WILD PLANT.

A short time ago I received a flower (and afterwards a plant), from the collection of W. A. Evans, Esq., of Leicester, which was clearly a hybrid between Paphiopedilum insigne and P. villosum. This particular plant came out of a batch of P. insigne "montanum," and from its weathered appearance was evidently an imported plant. The flower on the whole resembled the typical P. insigne, in both form and colour, but the influence of P. villosum was unmistakable:—(1) In the long hairs of the scape, ovary, and upper sepal. (2) The elongated bract and lower sepal. (3) The spathulate, curled petals, varnished brown, with prominent mid-line. (4) The long, acute lip, with horns wide and deep. (5) The long and narrow staminode. (6) The erect habit of growth, glossy, dark green leaves, dotted with purple at the base beneath. The foliage of this hybrid is even more tell-tale than the flowers, so much so, that last year when I saw the plant, unflowered, among the P. insigne, I suggested to Mr. Evans that it might be P. villosum, not then suspecting it to be a natural hybrid. For garden purposes, this plant comes very near to P. × nitens var. Sallieri.

C. Chamberlain Hurst, f.l.s.

PAPHIOPEDILUM × LEEANUM AS A WILD PLANT.

The wild form of Paphiopedilum × Leeanum, of which an account by Mr. Griesson was given at page 50, is figured in *Indian Gardening* for January 25th (vol. vi., p. 54, fig. 5), and quite bears out what has been said respecting it. It is clearly a hybrid between P. insigne and P. Spicerianum, and one of the forms without spots on the dorsal sepal. The definite information now to hand recalls the curious plant known as Cypripedium insigne Measuresiæ (*Orch. Rev.*, vii, p. 76), and it becomes increasingly evident that it also is another form of this wild hybrid.

R. A. R.

OBTUARY.

THE MARQUIS OF LOTHIAN.—The death of the Marquis of Lothian, which was recently announced, removes from us another enthusiastic amateur of the quaint and pretty genus, Masdevallia. His collection of these plants at Newbattle Abbey, Dalkeith, was very rich, and formed the basis of a fine monograph of the genus issued by him same time ago, illustrated by Miss Woodward, with geographical notes by Consul F. H. Lehmann.

W. H. LUMSDEN.—Another well-known Orchidist passed away on January 7th, in the person of Mr. W. H. Lumsden, F.R.H.S., of Balmedie, Aberdeenshire. The deceased, who was in his 48th year, has been in failing health for some months, though he was only confined to his room between two and three weeks. Mr. Lumsden was the possessor of a fine collection of Orchids, which of late have been under the charge of Mr. G. W. Cummins, and we believe that it was in this collection that the first hybrid of Paphipedilum Charlesworthii flowered something over a year ago. P. × Balmedianum, noted at page 10, was also raised in the collection.

LÆLIA CRISPILABIA.

THIS rare little Lælia now seems to have been introduced in some quantity, by Messrs. John Cowan and Co., of Gateacre, and has flowered in the collection of Reginald Young, Esq., Sefton Park, Liverpool, and other collections. It seems to have been first published in 1862, under the name of Bletia crispilabia (*Xen. Orch.*, ii., p. 61), by Reichenbach, who informs us that it is the Lælia crispilabia of A. Richard's Herbarium, and that it was supposed to have been collected in Mexico, by Galeotti, a statement which he scarcely credited. It was afterwards figured under the latter name by Warner, in his *Select Orchidaceous Plants* (ii. t. 6), where we learn that it is the Lælia Lawrenceana of English gardens, and that it had been grown by Mrs. Lawrence for several years, though nothing further could be added about its history. Messrs. Veitch reduced it to L. cinnabarina var. crispilabia (*Man. Orch.*, ii., p. 63) adding that the plant has since been imported once by Messrs. Hugh Low and Co., in very restricted numbers. It is now known to be a native of Brazil, and to be specifically distinct from L. cinnabarina, not ouly in having light purple flowers, but in various other details, and, if not showy, it is at all events a very interesting little plant.

R. A. R.

LÆLIA COWANI.

ABOUT a year ago a plant was distributed by Messrs. John Cowan and Co., of Gateacre, near Liverpool, under the name of Lælia Cowani, which has since flowered in several collections, being exhibited, I believe, for the first time by Sir Trevor Lawrence, at the last Temple Show. The flower proved so similar to L. flava Lindl. that the question was raised whether it was not a variety of that species, and although I have since compared the plants, I do not yet feel sure of the correct answer. One remarkable difference which the novelty presents is its much elongated slender pseudobulbs, which attain a length of six to nine inches, while the leaves also reach a similar length, both characters contrasting strongly with the short, stout bulbs and leaves of L. flava. See figures in the *Botanical Register* (1842, t. 62) and *Orchid Album* (v. t. 226). The numerous plants seen by me agree in this respect, yet the flowers are so similar in the two that I do not know how they can be separated. There is also a plant which was collected in the Serra de Piedade in the province of Minas Geraes by Martius, and described by Lindley as L. caulescens (*Bot. Reg.*, 1841, sub. t. 1), but it seems to represent only the most luxuriant state of L. flava, when the pseudobulbs become four inches long, retaining, however, their stout character. Indeed, it was afterwards abandoned by Lindley as synonymous (*Bot. Reg.*, 1842, t. 62). A plant, however, figured as L. flava in *L'Orchidophile* (1891, p. 177, with plate) has long, slender stems and elongated leaves, and apparently agrees in other respects with L. Cowani. It was from the collection of M. Moreau, which is all that is given of its history. The question therefore remains whether L. flava is not more polymorphic than generally supposed, and whether L. Cowani is more than a local form of it.

R. A. R.

ORCHID CULTURE IN LEAF MOULD.

EPIPHYTAL Orchids, when cultivated in light leaf-soil, seem to flower more abundantly than when grown in the ordinary way. The following is the course of proceedure recommended by some Belgian growers:—"For this culture Orchids recently inported should be chosen. Sufficient drainage is placed in the pot, and the plant is fixed upon the soil, which is slightly elevated to form a small hill in the pot. The surface is then covered with a layer of living sphagnum. The necessary degree of moisture to maintain the sphagnum always fresh is assured by syringing. No other vegetation, such as moss, fungus, &c., penetrates the soil, of which the roots of the Orchids can thus make full use, without the air entering at the

centre of the pot. The soil should be thoroughly decomposed, and should consist of 30 per cent. of oak-leaves, 15 of white beech, 15 of alder, 15 of ash, 15 of red beech, and 10 of coarse white sand. The exact proportion of each of these elements to be applied to one or the other kind of epiphytal Orchids cannot be indicated with precision, but has to be found out by experience. The essential point in this method of culture is to place the plants as far as possible under circumstances which answer best to the natural conditions under which they are found in a wild state, and to water very carefully, avoiding every excess, as this compost is more retentive of moisture than the usual one of fibrous peat."—Extract from a paper entitled "Orchid cultivation in Belgium," read at the Kew Gardens Mutual Improvement Society, on January 29th, by Mr. A. H. Prehn.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING was held in the Coal Exchange, Manchester, on February 1st, 1900, when there was a very fair display for the season. The members Present were :—Dr. Hodgkinson, in the chair, Messrs. W. Duckworth, J. Cypher, W. Holmes, C. Parker, and P. Weathers.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed Cattleya Trianæ picturata (A.M.), Dendrobium nobile virginale, an extra fine specimen of this beautiful albino (F.C.), a Cypripedium seedling apparently derived from C. Rothschildianum and C. Curtisii, and thus a form of C. × A. de Lairesse, C. × Leeanum giganteum × Bruno (A.M.), C. villosum giganteum, and C. × Germinyanum cœrulescens. Other good things were also included in the group, to which a Silver-gilt Medal was awarded.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed a plant of the pretty Dendrobium × Curtisii (A.M.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed a fine specimen of Dendrobium × Cassiope (Cult. C.) and a very nice group of Odontoglossum crispum varieties, well grown and flowered, for which he received a Vote of Thanks.

Mrs. Gratrix, Whalley Range (gr. Mr. McLeod), showed Cypripedium × Leeanum Clinkaberryanum (A. M.), and C. × Thompsoni (F.C.).

Mr. James Cypher, Cheltenham, showed Cypripedium × Woottoni (A.M.), and Dendrobium × Ethel, the latter resulting from D. moniliforme × D. × Rolfeæ roseum (A.M.).

Mr. John Robson, Altrincham, showed Cypripedium insigne Dormanii.

Mr. R. Eichel, Bingley, showed Cypripedium × Henry Graves, C. superbiens, and C. insigne Ernesti.

At the meeting held on February 22nd, there was again a very good

display. The members present were:—Messrs. W. Thompson (in the chair), G. Shorland Ball, Rappart, Lovell, Baxter, Bolton, Parker, Cypher, Holmes, Upjohn, Johnson, Stevens, and Weathers (hon. sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed Lælia Jongheana of fair form and good in colour (A.M.), and the interesting Zygopetalum Ballii, which was awarded a First-class Certificate in June, 1898.

W. Thompson, Esq., Walton Grange (gr. Mr. Stevens), showed a magnificent group of Odontoglossums, for which a Gold Medal was awarded, and the following plants were singled out for special mark, O. crispum Duke of York (F.C.), O. c. Yellow Gem (F.C.), O. sceptrum grandiflorum (F.C.), O. × loochristiense Kimberley (F.C.), O. × Adrianæ Lady Roberts (A.M.), O. crispum The Sirdar (A.M.), O. c. Madonna (A.M.), O. × Wilckeanum concinnum (A.M.), and O. × excellens McBeanianum (A.M.).

Thomas Statter, Esq., Stand Hall (gr. Mr. Johnson), showed Dendrobium Findlayanum × Cassiope, and Cypripedium × Statterianum.

John Leemann, Esq., Heaton Mersey, (gr. Mr. Edge), showed the beautiful Lælio-cattleya × Berthe Fournier (F.C.), Cattleya Trianæ West Bank House variety, C. T. Empress (A.M.), C. T. enfieldense (A.M.), Lælia anceps Leemanni, C. × Vipanii (A.M.), and C. Rothschildianum × Curtisii (A.M.). This exhibitor staged a very fine group for which a Silver-gilt Medal was awarded.

Samuel Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Cattleya Trianæ General French (A.M.), Cypripedium × Cowleyanum magnificum (A.M.), and C. × J. Howes (A.M.).

D. B. Rappart, Esq., Liscard (gr. Mr. Nicholson), showed Cattleya Trianæ Mooreana, C. T. Backhouseana (A.M.), Cypripedium × Harrisianum albens (A.M.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Odontoglossum crispum Lady Roberts (A.M.), O. × Andersonianum, Oakfield var. (A.M.), and O. × Wilckeanum Robertsii.

W. Bolton, Esq., Warrington (gr. Mr. Cain), showed two good forms of Cattleya Trianæ.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed the beautiful Dendrobium nobile virginale (F.C.), Lælio-cattleya × calistoglossa, Odontoglossum × Humeanum, and O. × H. aspersum.

Mr. J. Cypher, Cheltenham, showed a good form of Cypripedium × Morganiæ. A Silver Medal was awarded to the group.

Mr. John Robson, Altrincham, showed Cypripedium × Dormanii, × C. nobile (A.M.), C. × Arthurianum, and C. × T. W. Bond.

Mr. A. J. Keeling, Bingley, showed Cypripedium × Courtauldianum.

YELLOW FORMS OF PAPHIOPEDILUM INSIGNE.

YELLOW forms of Paphiopedilum insigne are now familiar to Orchidists, as

FIG. 10. P. I. ERNESTI.

FIG. 11. P. I. LAURA KIMBALL.

FIG. 12. P. I. SANDERIANUM.

FIG. 13. P. I. SANDERIANUM.

FIG. 14. P. I. YOUNGIANUM.

FIG. 15. WM. MILLIE DOW.

many such have appeared during recent years, and have received distinctive names. It is not often, however, that one has an opportunity of comparing them together, and we are therefore the more pleased to be able to illustrate a remarkable group which was exhibited by Mr. J. E. Rothwell, of Brookline, Mass., in the Horticultural Hall, Boston, on January 6th last, and to which the Silver Medal of the Massachusetts Horticultural Society was awarded. The features of the group have been permanently fixed by the unerring eye of the camera, and we are now able to reproduce the picture. Beginning on the left we have first an example of P. i. Ernesti (fig. 10), bearing three flowers. Next comes P. i. Laura Kimball (fig. 11), with a single flower, and this is evidently very near to the well-known P. i. Sanderæ (fig. 12), of which a fine example with three blooms occupies the centre of the group. Below it on the right is P. i. Sanderianum (fig. 13), with a single flower, clearly distinct in shape. Then comes P. i. Youngianum (fig. 14), and lastly, on the extreme right P. i. William Millie Dow (fig. 15). The last named is a fine thing, and, like the preceding one and P. i. Ernesti, has more distinct traces of spotting than the others. *It is* certainly a most beautiful group, and its equal has not previously been exhibited elsewhere.

Mr. Rothwell writes that he takes great interest in Cypripediums, of which his collection contains over 350 varieties. He has many houses of seedlings, and during last year a number from bellatulum album made their appearance and are doing well. His crosses are mostly from bellatulum, concolor, niveum, and Rothschildianum, and the seedlings make rapid growth, doubtless owing to the large percentage of clear, sunny days. We hope that they will prove equally satisfactory when reaching the flowering stage, and perhaps we may have the pleasure of seeing some of them hereafter.

CALENDAR OF OPERATIONS FOR MARCH.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

TEMPERATURES.—There should now be a slight rise all round above the figures given for January last, even without sun heat; and when the sun shines, the rise will, of course, be considerable, which will do a great deal of good.

ATMOSPHERE.—Moisture should now be distributed rather abundantly. The fire heat by night, and the increased sun power by day, will cause the moisture to evaporate quickly, and twice a day should not now be too much. In any case it must be once daily, and that when the temperature has risen in the morning.

WATERING.—This should still be performed with due care and

discrimination. Do not keep the mass of compost too wet just yet, but rather continue the surface waterings occasionally, which will prove sufficient to maintain plumpness of the leaves and pseudobulbs. Much water is not required, because growth is not yet sufficiently active to absorb it, nor can the weather, at present, be relied on to remain genial and conducive to free growth and ventilation for any length of time.

VENTILATION.—This should also be done with great care during the present month, and only when outside conditions are favourable. Remember that the cold winds are very treacherous, and that the plants are slightly less hardy than before the winter's comparative confinement, and consequently will not so successfully withstand large draughts of air. Avoid giving top air, if possible, even in the coolest department, rather let the temperature run up a little higher than usual.

THE FIRES.—Stoking requires particular care at this season. A good supply of artificial warmth will doubtless still be required at night, but during sunny days the less the better, or the temperature will rise to an excessive degree, to reduce which one is almost compelled to ventilate freely, and also to shade, and this should be avoided. When the fire is banked up for the night the temperatures should stand so that a fall of from 5° to 10° may be allowed by the morning. If the sun, then, may reasonably be expected to appear, the fire should not be lighted until about mid-day, and the pipes will again become warm by the time the sun's power declines.

SHADING.—The Odontoglossum house, if having a southern aspect, will now probably be better if lightly shaded during the brightest part of the day, but for the other departments this should be unnecessary during the present month, as the plants will revel in the extra solar warmth, that is, if the fires are properly managed and enough moisture is distributed to prevent excessive aridity, which would result in a loss of foliage.

RE-POTTING AND TOP-DRESSING.—Get on with this wherever possible. The Phaiuses of the grandifolius and Wallichii sections, having been kept pretty dry since blooming, will now be in good order for re-potting, if necessary. I emphasize the last word, for it is bad practice to disturb the roots of any Orchid unless absolutely necessary, either because the bulbs have become too much cramped for pot space, when, of course, a larger size is required, or because the plant has fallen out of health and become smaller, when new compost and a smaller pot should be given. The latter course is generally an unsatisfactory one, but still necessary in order to prevent a plant going from bad to worse, and ultimately dying. It cannot be altogether avoided, even in the best grown collections. An Orchid should rarely require re-potting for any other cause, as the receptacle, whether pan, pot, or basket, should not be too large for it to outgrow before the compost has time to become sour and exhausted. A well

potted and carefully-watered plant will last two years and upwards in a perfectly sweet and healthy condition. The strong-growing, terrestrial species of Phaius delight in a compost of more body than is usual for Orchids, and a mixture of turfy loam and turfy Azalea peat in equal proportions, with a liberal addition of sand, and a little broken charcoal mixed in, suits them admirably. They prefer pots, which should be drained about one third their depth. The compost should be pressed in pretty firmly, but it should not be mounded up above the rim of the pot, as is usual with epiphytic Orchids, but a space of an inch left below the rim for the better convenience of watering. They grow best on the stage in the warmest house, but will also do very well in the intermediate house. When repotting it is advisable to remove as much of the old material round the roots as will come away easily, which is generally in the centre of the ball. Should the roots be matted together with a quantity of the compost round the sides of the ball, as frequently happens, they may not be unravelled, but dropped in the new pot intact so as not to injure them. Care must always be taken to fill up any space in the ball from where the old material has been excavated with new. Water sparingly for a time.

PHAIUS TUBERCULOSUS. — This beautiful epiphytic species is best cultivated in the warmest house, where a shady, moist position, not too far away from the glass roof, should be given it. It should be grown in shallow but rather wide pans or baskets, as the rhizome creeps several inches before the pseudobulb is formed. It thrives best in peat and sphagnum moss, which should always be kept moist in the summer months. Now is a good time for attending to them. Yellow thrip is a great pest, and must be kept away by the presence of tobacco powder. P. Humblotii and P. maculatus may also now be seen to, but these are best grown in pots, in a richer compost, as previously advised for the terrestrial species.

AGANISIA CŒRULEA is another warm growing species that starts about this season, and should now be examined. It may be grown in pans or baskets, in the usual compost, but I think a teak raft preferable. Suspend in a light position, and keep well syringed during the growing season. Plants growing on blocks, and wanted to be detached for any purpose, come away better when the block and roots are wet.

CATTLEYAS.—Some of these, particularly C. Trianæ, are now pushing forth new roots in great profusion, and should be attended to, beginning with those the most advanced, and exercising the greatest care not to disturb or break the roots. Good fibrous peat and spagnum moss in equal parts is the best possible compost, and either pots, pans or baskets may be used, according to the position they are to occupy.

EPIDENDRUMS.—The long-stemmed species of Epidendrum, such as E. Wallisii, Endresii, xanthinum, radicans, and × O'Brienianum, are now

becoming active and pushing out new roots, and the present time is therefore favourable for repotting, top-dressing, or division. E. Wallisii is an extremely pretty little species, and when the plant has attained a reasonable size it is nearly always in bloom. It is best grown in well-drained pots, in lumpy peat and sand, and potted firmly. Just a little sphagnum may be used to surface with, so as to grow and look nice. It does well in the intermediate department. E. xanthinum is another elegant species of the same habit, and requiring similar treatment. E. radicans is a brilliant species, of rambling habit, and emitting roots throughout the whole length of its scandent stems. It should therefore have stout teak or other rods fixed in the centre of the pot for support, and be kept well syringed during the summer months. Similar treatment is required by E. × O'Brienianum, which is a descendant of the last named, and an exceptionally free grower. Both are intermediate kinds. Any other species of Epidendrum now starting away to grow after its winter's rest, as E. prismatocarpum, E. dichromum, &c., should also be examined and attended to.

Catasetums.—These, with the allied Mormodes and Cycnoches, are rather peculiar plants to get on successfully with, unless they receive a long and very dry rest throughout the winter months, in an intermediate temperature. About this time they again awaken to activity, and commence to push new growth, together with large fleshy roots, which must be preserved. I have invariably found it best to grow them in small hanging receptacles, taking them out and supplying wholly new material each year, and using nothing but sphagnum moss mixed with broken charcoal, and the usual drainage, which must of course be ample. This may now be done, and the plants removed to their growing quarters in the warmest house, but still be kept fairly short of water until better weather arrives, and the roots get well hold of the new materials, otherwise the new growths may damp off. Keep the growth going by moistening the surface with a fine rose syringe when it seems to be getting over-dry. They are exceedingly interesting Orchids, but culturally are certainly rather tricky.

East Indian House.—Much work may now be got over here if a good supply of moss is at hand. The Aërides, Vandas, Saccolabiums, and Angræcums may be looked over and re-surfaced with new moss, and also cleaned, staked, and generally put in growing order, afterwards keeping the surroundings moist, but here also avoiding heavy waterings for some time to come. Teak wood cylinders in place of pots are used with great advantage for the stronger growing kinds, whilst the smaller growing sorts, like Saccolabium ampullaceum and curvifolium, Vanda cœrulescens and lamellata, and most of the Angræcums, are better cultivated in baskets or pans, and suspended. Avoid removing the roots froms the crocks and charcoal as much as possible, and from the sides of the pots or the bars of

teak to which they are clinging, or a great check to growth and loss of foliage will follow. For this reason the system of lowering those that have developed long bare stems is a matter for serious consideration, and should not be undertaken unless it can be done without great root mutilation. It is, of course, more pleasing to the eye to see green leaves down to the surface of the moss, but after all it should be remembered that it is only natural for the stems to become denuded in time, and that by lowering these stems we destroy the chances of the offshoots which might possibly break forth. By all means, however, lower a plant if in weakly health, with but few, if any, live roots at the base.

CHYSIS, having enjoyed a long dry rest in intermediate temperature, will now be starting again into growth, and at the same time forming their flower trusses from the side of the new growths. These should now have encouragement by being returned to the East Indian house, and larger supplies of water gradually given, also larger receptacles, if necessary. They are best grown in baskets and rarely want shifting, all that is necessary being to pick out the old moss from between the bars and fill in with new. Thus the roots which cling to the bars very firmly are not disturbed. Chysis bractescens is a noble Orchid when well grown, the truss of blooms being of great size.

ANGULOAS are also becoming active after their long dry rest, which they so much enjoy. They should be grown in two parts lumpy peat, to one each of sphagnum moss and fibrous loam, and if re-potting is considered necessary should be done now, for if left until the flowering period is over the roots are much too far advanced. The flower buds will appear from the base of the new growths and flower almost simultaneously. They grow well either in the Intermediate or Cool house. The same remarks also apply to Lycastes, as these produce their flower buds in exactly the same manner, and therefore require re-potting just as the new growth commences. They then recover very quickly, because the new roots, as they appear, enter the new compost, and are soon firmly re-established. The compost should also be of the same proportions and pressed in firmly, watering at first with care.

THE AMATEUR'S HOUSE should scarcely want much shading this month, and the increased sun heat which it will now receive will be very beneficial to the majority of the inmates. If the sky, however, should be exceptionally clear, and the sunlight unbroken by clouds, it will probably be advisable to run the blinds down for a few hours, say from eleven until three o'clock, which would be less risky than putting on too much air at this treacherous period. Do what watering and syringing is required during the morning, between the hours of 8 and 12 o'clock. Once a day should suffice as yet, but there may be occasions, when the weather is exceptionally bright, that a little more may be distributed on the

paths, &c., in the afternoons, when the blinds are removed and the ventilators closed. But do not wet the plants overhead after the morning for some little time to come. A temperature of 50° to 60° at night will still suffice, but it may rise a little during the day with sun heat, and if the weather is genial, a little air should be given. It can scarcely get too warm from the sun's power alone this month, but if occasionally this should become too powerful let the blinds be run down as before suggested. Give water enough to maintain a healthy plumpness of leaves and pseudobulbs, but avoid over saturating the compost.

If the structure has a partition, so as to make a separate department for the Odontoglossum crispum type, instead of growing them in frames during the summer, that department should of course be kept a little colder by shading more from the sun, but the same amount of watering and damping is required. Without such a partition such kinds should be placed together, so that they may be better shaded without doing the whole house, for it is yet too early in the season to put them straightway out in frames, unless such frames have a hot-water pipe running through them, which would give a slight warmth when required.

DENDROBIUMS are very suitable kinds for the amateur to grow, and they are very beautiful. There may perhaps be a few which will not prosper, and if that should prove to be the case such may be discarded. I refer to such species as D. Phalænopsis, D. Johnsoniæ (Macfarlanei), D. superbum, D. superbiens, D. bigibbum, D. atroviolaceum, and a few other of the Torres Straits species, which seem to require an exceptional amount of heat. There is no reason why even these should not be given a trial, for it may be that the house will suit them, although no surprise need be felt if it does not. I have sometimes seen very good plants in such houses. The majority of Dendrobes, however, will thrive very well without such uncertainty, and they will this month make a fine show of bloom. The chief points of culture to consider are as follows:—Keep them to comparatively small receptacles, and grow all that will admit of it in pans or baskets, for they are usually more at home when hanging from the roof than when standing on the stages. Strong erect growing kinds must of necessity stand on the stages. Do not re-pot more then is absolutely necessary. The roots will remain a long time in a sound and healthy condition if not over watered. They enjoy a long, dry, cool rest, from Autumn, when the growth is completed, until the present time, when new growth starts and the blooms expand. They should still be kept on the dry side, giving sufficient water only to keep them from shrivelling, and to slightly assist the new growths, they will then proceed steadily but surely, and but few if any will be lost through damping off. By and by, with better weather, the new pseudobulbs will quickly form up, and will be the better for not being hurried now.

MASDEVALLIA CALYPTRATA.

"How does it differ from M. corniculata, Rchb. f.?" (*Orch. Rev.*, iii. p. 373). This doubtful point can now be settled. The species was described in 1896 as Masdevallia eclyptrata (Kränzl. in *Gard. Chron.*, 1895, xviii. p. 577), the name evidently being a misprint for M. calyptrata, under which it was again described shortly afterwards (Kränzl. in *Notizbl. K. Bot. Gart. Berlin*, i. p. 83). In 1896, Mr. F. W. Moore, of Glasnevin, obtained from the Berlin Botanic Garden what he was informed was a part of the type plant, and it has now flowered and proves to be simply M. corniculata, Rchb. f.

R. A. R.

FIG. 16. CATTLEYA TRIANÆ ARKLEANA.

The accompanying figure represents what may almost be termed a model form of Cattleya Trianæ, so far as shape is concerned, for the broad, gracefully recurved and undulate petals, and rounded lip, render the flower particulaly effective. The colour is also very beautiful, the sepals and petals being blush pink, and the lip rich purple-crimson, extending into the throat so as to obliterate the yellow usually found there. It flowered in the collection of John W. Arkle, Esq., of West Derby, Liverpool, in 1895. C. T. regalis (*Lindenia*, t. 580, fig. 2) is very similar, if not quite identical.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

A MEETING of the Royal Horticultural Society was held at the Drill Hall, James Street, Westminster, on February 13th, when, owing to the severity of the weather, the display of Orchids was smaller than usual, and consisted chiefly of cut flowers. The members of the Orchid Committee present were :—J. Gurney Fowler, Esq., in the Chair, and Messrs. T. W. Bond, H. J. Chapman, W. Cobb, De B. Crawshay, J. T. Gabriel, E. Hill, H. Little, C. Maron (Brunoy, France), H. T. Pitt, J. W. Potter, F. J. Thorne, H. A. Tracy, R. B. White, C. Winn, W. H. Young, and J. O'Brien (hon. secretary.)

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), showed the pure white Calanthe × Sibyl, C. × Phœbe, a pretty light rose form, three pretty Phaio-calanthes, varying from blush-white to rose-pink, the superb Odontoglossum crispum Cooksoni, and the richly blotched O. c. Mundyanum, the latter receiving a First-class Certificate.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent a good form of Cypripedium × Lathamianum, and the curious Dendrobium macrophyllum, the latter receiving a Botanical Certificate.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent the curious pale green *Zygopetalum Murrayanum*, to which a Botanical Certificate was given.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr Howes), sent good spikes of Lælia anceps Sanderiana and L. a. Stella, also a plant called Cypripedium × Bassano, reputed to be derived from C. insigne crossed with C. i. Chantini, which, if correct, would make it only a variety of insigne. By appearance, it might be a good form of C. × nitens.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent the handsome Cattleya × Miranda, a good, richly coloured form, C. Trianæ, Cypripedium × Chamber-Leeanum, and the pretty C. × woodfordiense (C. × beechense × Charlesworthii.)

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent Cypripedium × Cyris, the handsome C. × Mons. de Curte, and two good forms of C. × Calypso, also a good form of Cattleya Trianæ, with a richly-coloured lip.

C. N. L. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), showed Cypripedium × The Gem (Calypso × Leeanum).

F. A. Rehder, Esq., The Avenue, Gipsy Hill (gr. Mr. Norris), showed Cypripedium × Favarger (Charlesworthii × concinnum), a pretty hybrid, with the dorsal sepal rose at the base, white above, and lined with purple-brown, and the petals and lip suffused with the latter colour.

R. Brooman White, Esq., Arddarroch, Dumbartonshire (gr. Mr. King),

showed fine spikes of Odontoglossum crispum and luteopurpureum, also O. triumphans and three good forms of O. × Andersonianum.

M. Ch. Maron, Brunoy, France, brought over Lælio-cattleya × Ernesti pallida, a pretty light form, with the sepals and petals soft cowslip yellow, and L.-c. × Berthe Fournier var. splendida, a very large and most richly-coloured form, to which a First-class Certificate was given.

Messrs. Heath and Son, Cheltenham, sent the pretty, white Dendrobium barbatulum, Cypripedium × Lathamianum giganteum, and a form of C. insigne.

Messrs. Linden, L'Horticulture Coloniale, Brussels, showed a fine blush form of Odontoglossum crispum, a dark form of O. × Andersonianum, and Cypripedium × Schusterianum (villosum × Hookeræ Volonteanum), in which the form and colour of both parents were combined.

At the meeting held on February 27th Orchids were represented in great force, the display being one of the finest which we have yet seen at the Drill Hall during February. The members of the Orchid Committee present were:—J. Gurney Fowler, Esq., in the Chair, and Messrs. H. Ballantine, T. W. Bond, H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, J. T. Gabriel, T. B. Haywood, E. Hill, J. Jaques, H. Little, C. J. Lucas, H. T. Pitt, J. W. Potter, W. Thompson, F. J. Thorne, H. A. Tracy, R. B. White, W. H. Young, and J. O'Brien (hon. secretary).

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a particularly fine group, to which a Silver-gilt Flora Medal was given. Dendrobiums were strongly represented, and included D. × Wiganiæ xanthochilum, D. × Clio and Burford var., D. × Juno, D. × Luna, D. × pallens, D. × Schneiderianum, D. × splendidissimum grandiflorum, D. × burfordiense, D. × melanodiscus, D. × chrysodiscus, D. × The Pearl, D. × Dominianum, D. × specio-Kingianum, the rare purple D. Treacherianum, a fine example of D. barbatulum, and the curious little D. herbaceum. Other good things were a fine example of Cochlioda vulcanica, cut spikes of Phalænopsis × intermedia Portei, P. Stuartiana, and several of P. Schilleriana, Masdevallia × glaphyrantha, M. × Curlei, M. Schrœderiana, two forms of Bulbophyllum Careyanum, Calanthe × gigas, the remarkable Bonatea speciosa, Cypripedium × Chamberlaino-insigne, C. × Alice, a remarkable series of ten forms of C. × hirsuto-Sallieri, showing a gradation from yellow to purple, and with both spotted and unspotted forms, and other interesting things. The rare Dendrobium Jerdonianum, and D. puniceum (Rolfe), bearing axillary heads of rose-purple flowers, each received a Botanical Certificate.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), also

received a Silver-gilt Flora Medal for an excellent group of well-grown things. It contained a splendid specimen of Cymbidium × eburneo-Lowianum, bearing seven spikes of expanded flowers and two others in bud (Cultural Commendation), Miltonia × Bleuana, Epidendrum × Wallisii, Lælia cinnabarina, L. harpophylla, Dendrobium atroviolaceum and others, Cypripedium × Lathamianum, × nitens, and others, Odontoglossum nævium with three spikes, O. cordatum, crispum, luteopurpureum, and a fine series of O. × Andersonianum varieties.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), staged a choice group of Odontoglossums, to which a Silver Flora Medal was given. It included the handsome O. × Wilckeanum concinnum, O. × W. Yellow Gem (noted at p. 112 of our last volume), O. × excellens vars. spectabile and nobilius, a good O. sceptrum bearing a branched spike of 21 flowers, and several handsome forms of the variable O. × Adrianæ. O. × loochristiense Kimberley and O. × Adrianæ Lord Roberts each received an Award of Merit.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Barrell), staged a fine group of Odontoglossums, in which O. crispum and O. × Andersonianum were represented by well-grown examples, together with a few other kinds. A Silver Banksian Medal was given.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Gibbons), sent a flower of the remarkable Zygopetalum Ballii (Rolfe), to which an Award of Merit was given. It is allied to *Z.* rostratum, but the sepals are light purple, the petals mottled with white towards the apex, and the lip white with some purple round the crest.

John Leemann, Esq., West Bank House, Heaton Mersey (gr. Mr. Edge), sent the pure white Dendrobium nobile virginale, and Cattleya Trianæ West Bank House var., a large and handsome form, an Award of Merit being given to the latter.

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), sent a splendid example of Dendrobium × splendidissimum grandiflorum with seven flowering growths (Cultural Commendation), and D. × Virgil (nobile × Ainsworthii), a nearly white flower with a dark blotch on the disc.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, sent a fine Cypripedium villosum aureum, also Restrepia leopardina and striata, the latter receiving a Botanical Certificate.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent Lælia Jongheana and L. anceps Dawsoni.

S. G. Lutwyche, Esq., Beckenham, showed Cypripedium × beechense and a seedling Dendrobium.

J. S. Moss, Esq., Wintershill, Bishops Waltham, sent the rare Cœlogyne Mossiæ and Cattleya Trianæ.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), sent a curious Schomburgkia with purple-red, undulate sepals and petals, whose identity is somewhat doubtful.

Baron Sir H. Schröder, The Dell, Staines (gr. Mr. Ballantine), sent two good examples of Lælia Jongheana.

Lieut.-Col. Shipway, Grove Park, Chiswick, sent a fine form of Cymbidium Tracyanum and Cattleya Trianæ albens.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Humphreys), showed the interesting little Lanium Berkeleyi, and cut flowers of Cattleya Trianæ vars. Leeana, Backhouseana, and Penelope.

Messrs. James Veitch & Sons, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It contained the charming Lælio-cattleya × Myra splendens, L.-c. × Antimachus, L.-c. × Pallas, two fine examples of L.-c. × callistoglossa splendida, the pretty little Sophrolælia × læta, forms of Lælia × Mrs. M. Gratrix, L. glauca, Phalænopsis × Ariadne, P. × Mrs. J. H. Veitch, Epidendrum radicans, E. × O'Brienianum, E. × elegantulum, a form of Odontoglossum × loochristiense, Cypripedium × Abas (Stonei ♀ × villosum ♂), Dendrobium atroviolaceum, and various other showy things. A First-class Certificate was awarded to Lælia × Edissa (anceps ♀ × purpurata ♂), a remarkable hybrid closely resembling the seed parent in growth and scape, but the flowers intermediate in shape and most like L. purpurata in colour.

Mr. James Cypher, Cheltenham, also staged a very good group, consisting chiefly of well-grown Dendrobiums, and received a Silver Banksian Medal. It included the superb D. × Cybele magnificum, D. × Ainsworthii Leechianum, D. × A. Cypher's var., D. × A. splendidissimum, D. nobile Cooksonianum, D. crassinode album, D. atroviolaceum, D. × Ethel (moniliforme × Rolfeæ roseum), and others, a fine Miltonia Roezlii, good examples of Sophronitis grandiflora, a very large Cypripedium villosum aureum, C. insigne, &c.

Messrs. Charlesworth and Co., Heaton, Bradford, sent Epilælia × heatonensis (Lælia cinnabarina ♀ × Epidendrum Wallisii ♂), a curious little plant with Epidendrum-like habit and flower, the latter having narrow orange-red sepals and petals, with a few spots on the latter, and a flat, oblong lip, yellow at the apex and marbled with purple at the base.

Messrs. Hugh Low and Co., Bush Hill Park, staged a good group, containing a splendid example of Cattleya Trianæ alba with thirty flowers, and some good coloured forms of the species, Odontoglossum crispum, flaveolum, and other good forms, O. × Andersonianum, Cypripedium × Charles Richman, a fine form of Dendrobium Wardianum, D. Brymerianum, and other good things.

Messrs. F. Sander and Co., St. Albans, staged a very pretty little group,

consisting of several hybrid Phaiuses, allied to P. × Marthæ, a series of hybrid Epidendrums of lost parentage, but apparently forms of E. × Endresio-Wallisii, varying much in colour, Lælia Jongheana, Epiphronitis × Veitchii, Selenipedium Titanum (longifolium Hincksianum ♀ × Lindleyanum ♂), &c.

Messrs. B. S. Williams and Son, Upper Holloway, also staged a good group, containing Cymbidium eburneum, Dendrobium × burfordiense, Platyclinis glumacea valida, Cypripediums Boxallii, callosum, villosum, × Winnianum, euryandrum, × Harrisianum superbum, and other interesting forms.

NOTES.

MEETINGS of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on March 13th and 27th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

Meetings of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on March 8th and 22nd. The Committee meets at noon, and the exhibits are open to inspection from one o'clock until three p.m.

The following new members have been added to the Royal Horticultural Society's Orchid Committee for the coming year:—W. H. Hay, Oakley Park, Eye, Suffolk; A. Hislop, Bletchley Park; J. Leemann, Heaton Mersey; C. J. Lucas, Horsham; J. Wilson Potter, Croydon; T. Rochford, Broxbourne, and H. A. Tracy, Twickenham.

An interesting departure from the usual course is announced in the arrangements for the Royal Horticultural Society for the present year. The meeting for Wednesday, June 27th, will not be held at the Drill Hall, but at Richmond, in conjunction with the Annual Show of the Richmond Horticultural Society, on which occasion the Orchid Committee will meet at 11.30 a.m. Single plants may be entered on the morning of the show, and may be removed the same day- Groups, however, must be entered not later than June 16th, and must be left for the second day of the show (June 28th), when they may be removed at 7 p.m. A united Luncheon has been arranged for the Council and Committees, together with the Local Committee and Judges, to which invitations will be issued in due course.

We hope to see a good display of Orchids on this occasion. The local Society's Show in the Old Deer Park is always a great success, and the additional importance given to the occasion by the co-operation of the great national Society, and the close proximity to Kew, is sure to draw

together a large concourse of visitors. Fellows will be admitted at 1 p.m. on showing their R.H.S. tickets.

The January number of the *Dictionnaire Iconographique des Orchidées* contains figures of Cattleya Aclandiæ, C. × Atlanta splendens, C. × Ella, C. × Goossensiana, C. Leopoldi purpurea, C. × Wendlandiana, Cypripedium × A. de Lairesse, C. × Mahleræ Dr. Clinge Doorenbos, Lissochilus Horsfallii, Oncidium Kramerianum, O. reflexum, Stanhopea Wardii, and Vanda Sanderiana.

In the accompanying *Chronique Orchidéenne* is a note by M. Otto Ballif on Grammatophyllum Roemplerianum, calling attention to its recent identification with Eulophiella Peetersiana, and making this name a synonym of the former. This is erroneous, for the plant is a true Eulophiella and not a Grammatophyllum. A plant of it has recently flowered with M. Peeters, of St. Gilles, Brussels, bearing two inflorescences.

M. A. Cogniaux, editor of the preceding work, was elected President of the Société Royale Botanique de Belgique in December last.

A work by M. Leon Duval, of Versailles, entitled *Le Livre des Odontoglossum* is said to be in the press, and we hope to be able to notice it in due course.

Lælio-cattleya × Doris maintains its brilliant character. A two-flowered inflorescence is sent from the collection of N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne. The sepals and petals are of clear light orange tint, and the lip light yellow, with a broad, brilliant amethyst border to the front lobe. It was obtained from Lælia harpophylla ♀ and Cattleya Trianæ ♂, and was described in our second volume (pp. 79, 111).

Paphiopedilum × Parkerianum is a handsome hybrid derived from P. × Boxallii atratum ♀ and P. × nitens ♂, to which a First-class Certificate was given by the Manchester Orchid Society in December, 1898. The dorsal sepal is beautifully spotted and lined with purple, and has a very broad white margin, while the petals are nearly horizontal. A flower is now sent from the collection of C. Parker, Esq., Ashton-on-Ribble.

An inflorescence of the beautiful Phalænopsis × Schilleriano-Stuartiana, which received a First-class Certificate from the Royal Horticultural Society on January 23rd last, has been sent by Messrs. Hugh Low & Co. In colour it is about intermediate between the two parents.

We have received from the collection of R. H. Measures, Esq., The Woodlands, Streatham, a flower of the handsome Cypripedium × Sir Redvers Buller (Smithii × insigne), which received a First-class Certificate

from the R. H. S. on January 9th last, when exhibited by W. M. Appleton, Esq., its raiser. It is very large, and densely spotted, both on the dorsal sepal and petals.

A mistake has crept into the account of Odontoglossum × loochristiense "Canary Bird" at page 355 of our last volume. Mr. Stevens writes that although not raised in the Walton Grange collection it was purchased as a hand-raised seedling, and that two or three other plants are in existence, one of them in the collection of T. Baxter, Esq., of Morecambe.

Flowers of a charming albino of Dendrobium nobile are sent from the collection of W. Thompson, Esq., Walton Grange. Stone, by Mr. Stevens. They are very beautiful, but not quite as large as the original D. n. virginale, figured at p. 145 of our fifth volume.

A good form of Cattleya Trianæ, with very brilliantly coloured lip, is sent from the collection of Dr. Cranstoun, of Ludlow. It is said to have been purchased from Mr. Bull, under the name of C. T. illustris.

A handsome hybrid, derived from L. Skinneri × plana is sent by Messrs. Cappe et fils, of Vesinet, France. It most resembles the latter in shape, and is very richly coloured, the sepals being rich red-purple and the petals and lip marbled with white. L. × Mary Gratrix (*O. R.*, vi., p. 153) and L. Balliæ (*l.c.*, p. 371) are both derived from this parentage.

ORCHID PORTRAITS.

CATTLEYA INTERMEDIA VAR. AQUINII, Rolfe.—*Gard. Chron.*, 1900, xxvii. p. 83, fig. 25.

CATTLEYA LABIATA VAR. ALFREDIANA, L. Lind.—*Lindenia*, t. 684.

CATTLEYA LODDIGESII HARRISONIÆ ALBA, L. Lind.—*Lindenia*, t. 682. This is C. Harrisoniana alba.

CYPRIPEDIUM × EVELYN AMES.—*Amer. Gardening*, xxi. pp. 112, 113, fig. 20.

CYPRIPEDIUM × GOWERIANUM FORMOSUM.—*Gard. Mag.*, 1900, p. 78, with fig.

CYPRIPEDIUM INSIGNE, six yellow varieties.—*Amer. Gardening*, xxi. p. 75. fig. 14.

CYPRIPEDIUM × LEEANUM.—*Indian Gardening*, vi. p. 54, fig. 5.

CYPRIPEDIUM × MRS. FRED. HARDY.—*Journ. Hort.*, 1900, xl. p. 131, fig. 33.

CYPRIPEDIUM ROTHSCHILDIANUM.—*Amer. Gardening*, xxi. p. 91, fig. 16,

CYPRIPEDIUM × SANDERIANO-CURTISII.—*Gard. Chron.*, 1900, xxvii. p. 75, fig. 23; *Garden*, 1900, lvii. p. 74, with fig.

EPIDENDRUM BICORNUTUM.—*Journ. Hort.*, 1900, xl. pp. 153, 154, fig. 39.

EPIDENDRUM ELEGANS, Rchb. f.—*Lindenia*, t. 681.

EPIDENDRUM × WALLISIO-CILIARE SUPERBUM.—*Journ. Hort.*, 1900, xl. p. 89, fig. 20.

LÆLIA RUBESCENS, Lindl.—*Lindenia*, t. 683.

LÆLIO-CATTLEYA × BERTHE FOURNIER VAR. SPLENDIDA.—*Gard. Mag.*, 1900, pp 108, 109, with fig.

LÆLIO-CATTLEYA × FANNY LEON.—*Garden*, 1900, lvii. p. 95, with fig.

ODONTOGLOSSUM CRISPUM COOKSONIANUM.—*Gard. Mag.* 1900, p. 99, with fig. VAR. FRANZ MASEREEL.—*Journ. Hort.*, 1900, xl. p. 111, fig. 26. VAR. MUNDYANUM.—*Gard. Mag.*, 1900, p. 99, with fig.; *Journ. Hort.*, 1900, xl. p. 153, fig. 38; *Gard. Chron.*, 1900, xxvii. p. 117, fig. 36.

PHALÆNOPSIS × INTERMEDIA BRYMERIANA.—*Gard. Mag.*, 1900, p. 63, with fig.

PHALÆNOPSIS × SCHILLERIANO-STUARTIANA.—*Journ. Hort.*, 1900, xl. p. 89, fig. 21; *Gard. Chron.*, 1900, xxvii. p. 83, fig. 26; *Gard. Mag.*, 1900, p. 63, with fig.

SOPHROLÆLIA × MARRIOTTIANA.—*Gard. Chron.*, 1900, xxvii. p. 66, fig. 20.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

H. L. & Co. Lælia anceps Williamsii, and differs from L. a. Sanderiana in having the front lobe of the lip pure white.

O. O. W. Can the seedling be a form of Paphiopedilum × Swanianum? The long hairs on the petals are clearly derived from P. Dayanum. The second parent is not quite so clear, but, if not P. barbatum, must have been a near ally. It may have been P. ciliolare, as suggested, but the spots on the petals are very few.

H. J. R., Florence. A Dendrobium allied to D. glomeratum, species unrecognised. The Paphiopedilum seedling from P. × Ashburtoniæ Barteti crossed with × œnanthum is a good, richly-coloured form which will probably show its true character at its next time of flowering. Two or three others closely resemble it.

G. W. Strictly speaking, all hybrids between Odontoglossum crispum and gloriosum are forms of O. × Andersonianum, however much they vary in colour and other details.

MM. C. & f. The seedling from Paphiopedilum × Harrisianum × Chamberlainianum may not yet be fully developed.

Photographs received, with thanks. O. O. W., G. P.A., R.Y.

ERRATUM.

Mr. Warburton writes that the plant called Odontoglossum crispum moortebeekiense at page 27, and also figured in the *Gardeners' Chronicle* (1899, xxvi, p. 431, fig. 136) should have been O. c. Lindeni. It is now in Mr. Warburton's Collection.

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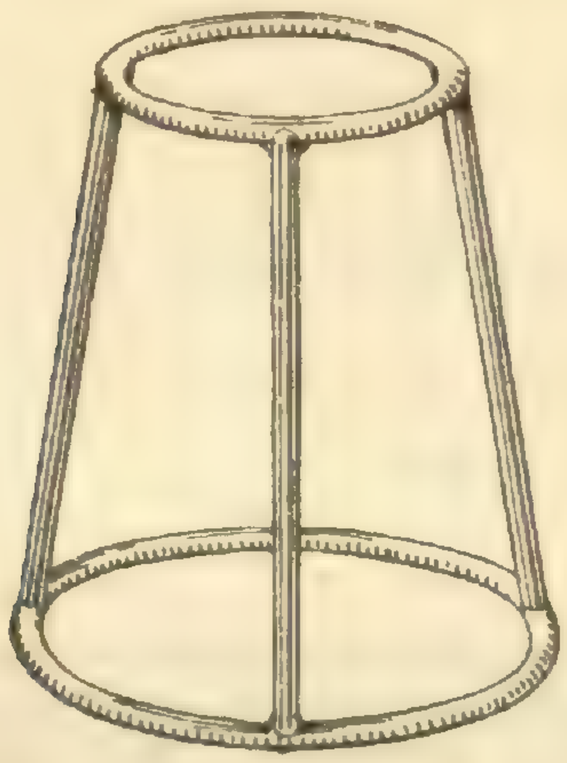

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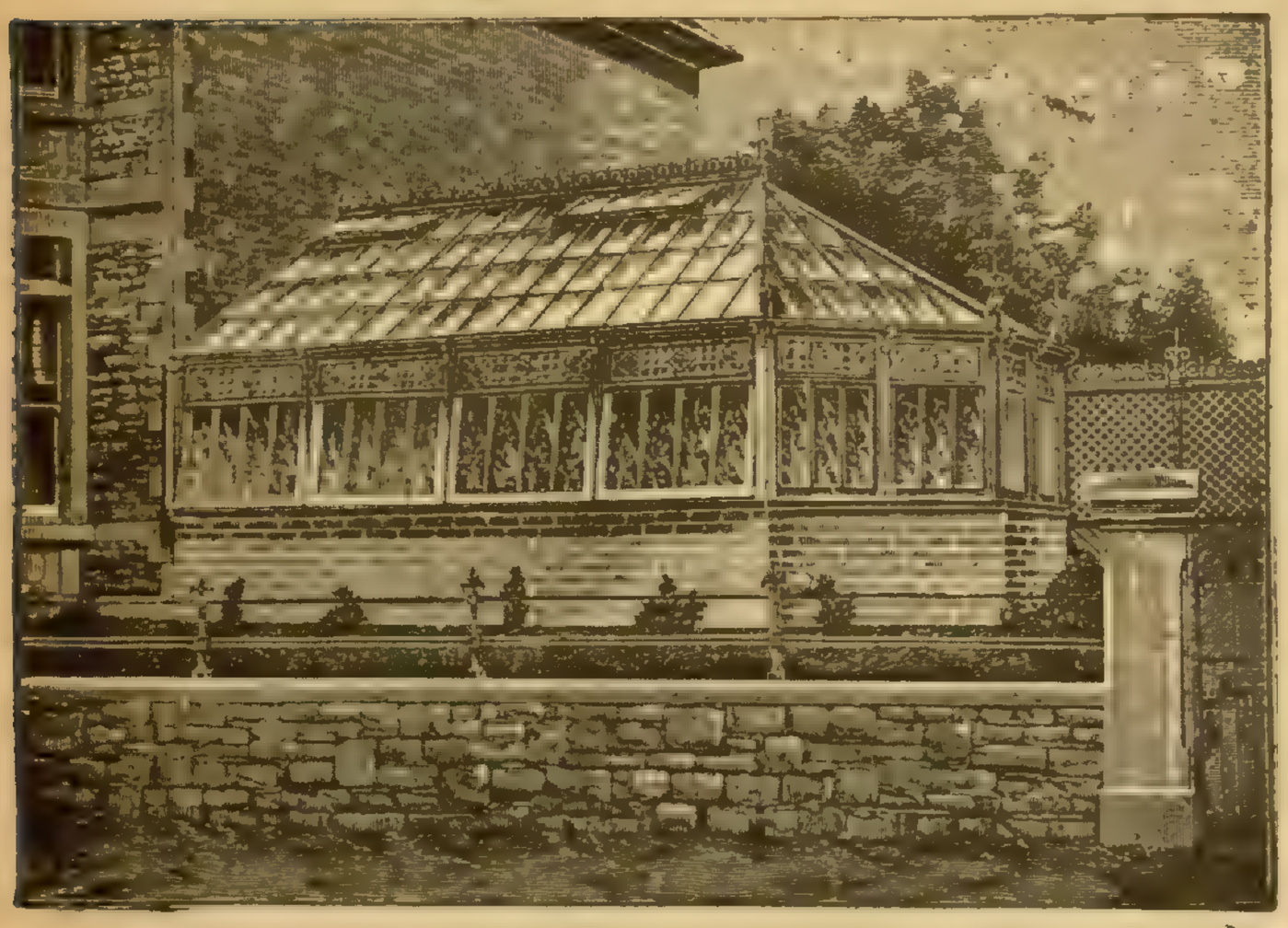

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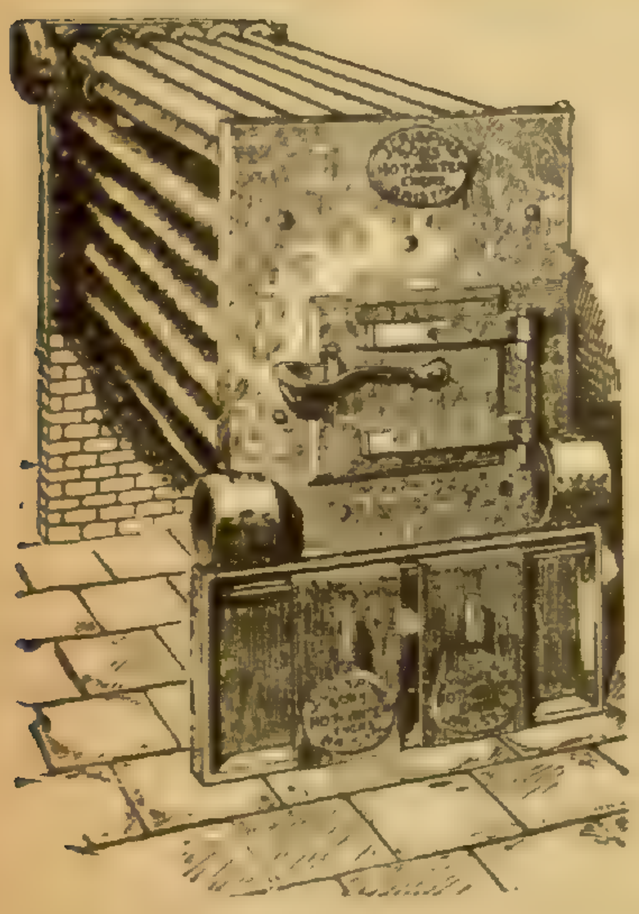

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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DIES ORCHIDIANÆ.

I WAS much struck with the beautiful group of yellow forms of Paphiopedilum insigne given at page 81, and I could not help thinking how useful it would be if other varieties of our most popular species could be illustrated in the same way. Such groups would form excellent standards for comparison, and, perhaps, help to check some of the rapidly growing confusion in the nomenclature of varieties—if only those who are so ready to give new names would first look up what the old varieties are like. Perhaps a difficulty would sometimes be found in getting the allied varieties in flower at the same time, or at all events in getting them together for the purpose of a photograph, but in many cases it would be quite practicable if the matter were taken in hand seriously. The example in question, at all events, is an excellent commencement, and I hope that everyone who has another yellow insigne to name will first consult this group.

The question of the nomenclature of varieties opened up a very interesting little discussion the other day with a well-known Orchidist, who, I find, takes a very rational view of the matter. He thinks that varietal names are a great convenience, and are, indeed, necessary for the proper identification of different forms of many of our most popular Orchids, but he very truly urges that in many cases we have far too many names. He would have every new variety registered in some way, so that it would be possible to identify it properly in future, and he would not allow any new name unless the plant to which it was applied showed some appreciable difference from those previously named. I quite agree with this proposal: it would represent quite an ideal condition of things, and I have agreed to consider whether any practical steps can be taken to bring it about.

The beautiful Odontoglossum crispum was one of the subjects—if it did not actually commence the discussion—and two of the questions which we

had to leave unanswered were, How many named varieties have we at the present time? And how many of them are really distinct? Perhaps some of my correspondents may care to answer the latter. It would certainly be interesting, in view of the fact that at almost every horticultural meeting now-a-days new names appear. One cannot help wondering how some of them would compare with their predecessors, could we only range them side by side. And how many of them will as rapidly fall into oblivion! A chronological list of named varieties of O. crispum would be instructive.

The other day I dropped across an article entitled "Hybridées du Cypripedium Sanderæ," by H. Dauthenay (*Rev. Hort.*, 1900, p. 152). It commenced with an introductory note on Cypripedium insigne Sanderæ, which, it says, has contributed to the parentage of five hybrids. It then proceeds to enumerate them, as follows:—1, C. × Sanderiano-superbiens (from superbiens and Sanderæ); 2, C. × Princess May (callosum and Sanderæ); 3, C. × Harri-Sanderi (Harrisianum and Sanderæ); 4, C. × Mistress Reginald Young (Lowii and Sanderæ); and 5, C. × Sanderiano-Curtisii (Sanderæ and Curtisii). It is professedly taken from an article by Mr. H. J. Chapman, in *The Garden*, and on looking this up I find that it is neither C. Sanderæ nor C. insigne Sanderæ, but C. Sanderianum that formed the subject of the original article. Is it any wonder that we have confusion in our records?

The other day, I was looking through the List of New Garden Plants for the years 1876 to 1896, recently issued from Kew, and found a note in the preface which has some practical bearing on the use of the vernacular in nomenclature, to which I have alluded on several occasions. "Hybrids . . . have been included," it runs, "where they have been described with formal botanical names . . . Only names are cited which agree in form, at any rate, with the usual binomial nomenclature." Accordingly, we find that many important primary hybrids have been omitted because they have only received popular names, a point which it will be well to bear in mind in using the list. It serves to emphasize my remarks at page 35, for if the plants omitted had been named in accordance with the R. H. S. Rules of Nomenclature they evidently would have been included in the list. Advocates of the use of the vernacular please note.

At page 79, it is recorded that an extra fine specimen of the beautiful albino Dendrobium nobile virginale received a First-class Certificate from the Manchester Orchid Society on February 1st. Now I see it is described under the name of D. nobile virginale Leemann's variety (*Gard. Chron.*, 1900, xxvii. p. 162), and I wonder what necessity there was for the addition.

In point of fact it is incorrect, for virginale is the variety, and the plant is either this or it is not. If it is different, it should receive a different varietal name, not an addition of the kind in question. It may be argued that it is a sub-variety, but if so, why not call it so at once? But is it necessary that names should be extended to such an inordinate length? This is not a comment on the merits of the plant, which I had not the good fortune to see. It is, however, spoken of as "an advance on the former variety, in that the greenish area, at the base of the lip, is absent, the whole flower being pure white except the labellum, which has the faintest shade of pale primrose colour." Now this is precisely the character of the original, which was both described and figured in these pages (v. p. 145). And several albinos which have since appeared have not been equal to the original form. [*See* figure on page 121.—*Ed.*]

I have called attention to this matter again, because a good many similar names have appeared of late, and in my opinion they only tend to confusion in nomenclature, which, in the abstract, everyone seems anxious to avoid.

ARGUS.

BULBOPHYLLUM WATSONIANUM.

THIS rare little plant is a native of Hong Kong, and was described by Reichenbach, from a specimen which flowered in 1888, at Kew (*Flora*, 1888, p. 155), where it has been cultivated ever since. This was not, however, its earliest appearance, for dried specimens at Kew show that it was described by Hance in 1883 (*Journ. of Bot.*, 1883, p. 232), under the name of Eria ambrosia. It is said to have been found on rocks at the summit of Victoria Peak, in March, 1875, by Mr. C. Ford. It has now appeared in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, having been received with other Orchids from the same island. It is a very distinct little plant, most allied to B. capillipes, Par. and Rchb. f., from Burma, and B. uniflorum, Griff, from the Bhotan Himalaya and Mishmi Hills. The scapes are slender, about two inches long, and bear solitary, whitish flowers, ten lines in diameter, and having the sepals longitudinally striped with reddish purple. The lateral sepals bear a pair of curious lobes above their junction with the stalk of the lip, which gives them a bilobed appearance, and the lip itself is very curious in structure, and not mobile as in most species of the genus. The rhizomes are creeping, and the oblong pseudo bulbs and leaves each about an inch long. The pollinia are four in number, as in Bulbophyllum.

R. A. R.

ORCHIDS IN SEASON.

CŒLOGYNE CRISTATA is now flowering to perfection, and a beautiful inflorescence of the chaste albino, C. c. alba, comes from the collection of J. W. Arkle, Esq., West Derby, Liverpool, also fine inflorescenses of Dendrobium albosanguineum and D. atroviolaceum. Mr. Arkle remarks that the latter succeeds very well with him, though some people give it a bad reputation. Being a native of New Guinea, it requires rather different treatment from the deciduous species, which, perhaps, accounts for the difficulty in some cases. The species of this affinity should not be rested in a cool house.

A large, rose-pink form of Cattleya Trianæ, with broad petals, is sent from the collection of Mrs. Hollond, Wonham, Bampton, N. Devon. The lip is rather brighter in colour, but is not well expanded in front, a fault to which the species seems rather liable.

Two handsome flowers, which each received an Award of Merit from the Manchester Orchid Society on February 22nd last, are sent from the collection of T. Baxter, Esq., of Morecambe, by Mr. Roberts. Odontoglossum crispum Lady Roberts is a large, light blush, unspotted form, of perfect shape, having the sepals more strongly tinged with rose than the rest of the flower. O. × Andersonianum Oakfield variety is a large and richly-spotted form, with long segments of good breadth, the flower measuring four inches across its broadest diameter.

Other flowers from the same collection, received subsequently, include O. × Andersonianum Baden-Powell, a well-spotted form with long acuminate segments, which received an Award of Merit at Manchester on March 8th; O. triumphans, the pretty little O. facetum, a dark form of O. × Denisonæ, and several good forms of O. crispum. One of the latter has blush flowers with a very large, dark red-purple blotch in front of the lip's crest, a second is a good dark O. c. roseum, and others are large, well-shaped, unspotted forms of this beautiful species, of which Mr. Baxter has now such a fine collection.

Paphiopedilums continue to make a fine show, and among some good flowers which we have received may be mentioned a flower of P. × œnanthum with two well-developed lateral sepals, which seem to be more spotted than usual. The other parts are very highly coloured, but one of the petals is only half as broad as usual. P. × Belus, in two very distinct forms, comes from the collection of Reginald Young, Esq., Sefton Park, Liverpool. Both also differ from the original one, being much richer in colour, and thus the colour of P. × Harrisianum has come out better, while the general shape of P. Mastersianum, the pollen parent, is still retained.

A seedling P. × calloso-barbatum is also sent from the collection of W. M. Appleton, Esq., of Weston-super-mare. It was raised from P.

barbatum Warneri × callosum, and is a good, bold flower, but lighter in colour than the original form.

Several beautiful Odontoglossums are sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. O. × Andersonianum pulvereum is a very pretty light yellow form, having the basal halves of the sepals and petals densely dotted with light cinnamon-brown. It was described at page 48 of our third volume. A closely similar form, so far as the spots are concerned, subsequently bloomed in the collection, but differs in having a white ground, and the spots consequently brighter in colour. It is very interesting to compare the two side by side. O. × mulus Crawshayanum is a fine variety, with the sepals and petals very heavily blotched with rich red-brown. There is also a fine heavily blotched form of O. × excellens, and O. triumphans with very bright yellow flowers and the brown markings considerably reduced in amount. They form a charming little group.

Odontoglossum sceptrum aureum, from the collection of W. Thompson, Esq., is a handsome form, in which the markings are very light in colour, and thus the flower appears much more yellow than in the type. It is perfect in shape, and the petals are exquisitively spotted.

NOTICE OF BOOK.

"*List of published names of plants introduced to cultivation: 1876 to 1896.*" Royal Gardens, Kew, Bulletin of Miscellaneous Information. Additional series, iv. pp. 410.

This very useful volume may be briefly described as an amalgamation of the annual Lists of New Garden Plants for the period of twenty-one years which it professes to cover, and as this period has witnessed an enormous extension in the culture of Orchids, we may take it that those who devote their attention chiefly to these plants will find the work as useful as those whose energies extend over a wider field. A preface by the director, Sir W. T. Thiselton-Dyer, explains the object of the work, and from it we may make a few extracts:—"The activity of private cultivators and nurserymen is continually enriching our gardens with plants which are either new to cultivation or have been re-introduced after being lost sight of. Every corner of the world which affords any prospect of rewarding a collector is systematically searched. It would be difficult to estimate the expenditure of money and labour upon this kind of enterprise, which has not seldom been attended with the sacrifice of life. Unfortunately, its results are too often launched upon commerce or otherwise distributed under names which have either been inaccurately determined or are purely fanciful. These names

cannot be wholly disregarded, inasmuch as they become current in horticultural literature. It constantly, therefore, becomes necessary to trace them to their earliest publication in order to obtain information as to the native country of the plants to which they belong, and other particulars relating to them. The task is, however, by no means an easy one, as the notices have to be sought in numerous and widely-scattered horticultural periodicals."

We may pass over the history of the annual lists—which can be traced back to the year 1860, when they commenced in the *Gardeners' Year Book*—to note the scope of the work itself. "In addition to species and well-marked varieties, hybrids, whether introduced or of garden origin, have been included where they have been described with formal botanical names. Mere cultural forms of well-known garden plants are omitted for obvious reasons." References to the original descriptions and figures are given, with brief notes on habit and the more prominent characters of the plant, with indications of native country and approximate cultural conditions.

In order to show what a prominent part Orchids play in the list, we may point out that out of the 7,600 names included, Odontoglossum and Cypripedium head the list with 350 each, then come Cattleya with 250, Dendrobium with 220, Lælia with 160, Masdevallia with 150, and Oncidium with 100. If some of these should appear disproportionately numerous, it only shows how much energy the describers of novelties have devoted to them, for the list is only intended to be an alphabetical index to garden literature, with such details as will be useful to those who may not be able to consult the numerous scattered periodicals in the original. "To have attempted to further elaborate it or to give it anything approaching scientific character would have postponed its publication indefinitely." Its cost is four shillings, which it has since been pointed out merely covers the cost of paper and printing. We think that the work is likely to prove of great general utility.

ODONTOGLOSSUM × ANDERSONIANUM VAR. BAPHICANTHUM.

THIS is, of course, the Odontoglossum baphicanthum of Reichenbach, and it is interesting to see at last a specimen named by the author himself, though it is not the original one described in 1876 (*Gard. Chron.*, 1876, vi., p. 276), which was sent to him by Mr. Arthur Veitch, and which was described as having "aristate sepals and petals, yellow with purplish blotches, and those finally are suffused over the whole of the sepals and petals (hence the name)." Lip "yellow with purplish spots." The one now under notice is from the collection of Norman C. Cookson, Esq., and has

light yellow flowers, with the disc of the sepals, petals, and lip ivory white, and a few purple spots near the base. It might, perhaps, be better described as having ivory white flowers, with all the segments broadly margined with yellow, and spotted as before, but without the purple suffusion seen in the original. The contrast of colour is very pretty.

R. A. R.

FERTILITY OF PAPHIOPEDILUM FAIRRIEANUM HYBRIDS.

POSSIBLY a record of failure may in some ways be as instructive as a record of success. It is for this reason that I do not hesitate to write out a complete list of my hybridising operations with respect to Paphiopedilum Fairrieanum hybrids for the years 1891 to 1898 inclusive. These attempts number seventy-two in all, and may be briefly summarized as follows:—

On four occasions I have tried to fertilize a Fairrieanum hybrid with the pollen of another Fairrieanum hybrid, but in each case without success, no good seed pod having developed.

I have used P. × vexillarium superbum as pollen parent twenty-six times on various species and hybrids, the result being that twenty of these attempts failed to produce good pods, and of the remaining six, when seed was sown, two only resulted satisfactorily, two seedlings being raised from one cross and four from the other. These hybrids have been named Paphiopedilum × Dædalus and × *Zalmoxis*, respectively. As a seed parent, P. × vexillarium superbum has been still less successful, no seedlings having resulted. My operations were seven in number, and from four of these no good pods resulted, while the seed sown on the other three occasions failed to germinate.

Passing to P. × Arthurianum, I have been thrice successful, twice when using it as pollen parent in conjunction with Spicerianum as seed parent—when I was rewarded with two batches of P. × Minos seedlings—and once as seed parent, the pollen parent being × Pitcherianum magnificum. The failures number seventeen, though some, where seed has been sown so late as September and October, 1899, may yet have to be transferred to the list of successes. As pollen parent, there were seven attempts, and on two occasions only did a good pod fail to develop, though the five apparent good pods proved unproductive when the seed was sown. As seed parent, the failures to produce a good pod numbered only four, against six when the seed was deemed worthy of being sown, although as yet without result.

With P. × Niobe I have been altogether unsuccessful. Out of eleven attempts to fertilize other Paphiopedilums, species and hybrids, with the

pollen of P. × Niobe, ten failures to produce a good pod have to be recorded, and when apparently good seed was once obtained, no seedlings made their appearance. As seed parent, three failures to produce a pod were experienced, and, in the one instance when seed was sown, seedlings were not forthcoming,

I am afraid that Fairrianum hybrids do not readily lend themselves to successful hybridisation, and that the proportion of failures to successes is great. However, if this statement of operations in my own collection is of any interest to Mr. J. E. Rothwell, or other of your readers, I am pleased to place it in evidence.

REGINALD YOUNG.

Liverpool.

[This is a very interesting summary of experiments made, and to a great extent in agreement with Mr. Rothwell's experiences. Mr. Young has furnished us with a detailed account of his operations, giving names and dates, but it is too long to reproduce. We find, however, five different sowings made in September and October last, all of which may yet germinate. These are (1) P. × Arthurianum × Leeanum; (2), the reverse cross; (3), P. × Arthurianum × Charlesworthii; (4) the reverse cross; and (5) P. × Ashburtonæ × Arthurianum. Of these No. 2 has been raised by Messrs. Veitch (P. × Mary Lee) and No. 1 by Mr. Rothwell. It also emphasizes the need for perseverance, for two of the failures agree with crosses which have yielded seedlings in other collections, P. × Statterianum and P. × bellatulo-vexillarium. The list shows seven experiments with P. Godefroyæ, six each with P. insigne, Spicerianum, × Leeanum, and × Ashburtonæ, and five each with P. Charlesworthii and P. × Pitcherianum, and these include all which have been or may yet be successful. The four failures between Fairrieanum hybrids above alluded to by Mr. Young are P. × Arthurianum × vexillarium, twice, the reverse cross, and P. × Niobe, self-pollinated. Of the two crosses which have flowered, P. × Zalmoxis is new, and is described on another page, and P. × Dædalus was accidentally overlooked. It was derived from P. insigne punctato-violaceum ♀ × P. × vexillarium superbum ♂, and was descibed at page 306 of our sixth volume. Mr. Young there showed that a hybrid between P. × Ashburtonæ and P. × Arthurianum should give a similar result, for an analysis would give in each case P. insigne ½, barbatum ¼, and Fairrieanum ¼, though the proportions were obtained by two different ways. Consequently he crossed P. × Arthurianum pulchellum with P. × Ashburtonæ Barteti, and also reversed the cross. The first cross failed, but the second was so far successful that seeds were sown last September, and we hope that they may germinate, and in due time flower, for the result would be most interesting. —ED.]

LÆLIA JONGHEANA.

THIS beautiful species has now flowered in numerous collections, and we are able to give a figure of a good plant from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, of which an excellent photograph has been taken by Miss Wrigley. The two flowers, which have also been sent, are borne on the same scape, and they measure six inches across from tip to tip of the petals, so that they represent a fine form of the species. The colour is light rosy purple, with a paler area intervening between the

FIG 17. LÆLIA JONGHEANA.

margin of the lip and the handsome orange-yellow disc, with its prominent fringed keels. The species is also blooming well in the collection of J. Broome, Esq., Sunny Hill, Llandudno, and Mr. Broome writes that one of the plants has two spikes, each bearing two flowers, and one of them had originally three buds, but the third bud dropped off. He further observes—"I can vouch for having noticed four flower seats on old imported spikes," from which it is evident that the plant is not yet fully developed. Another

season, when it has had time to establish itself, we may be able to see more of its true character. Meantime, it has been taken in hand by the hybridist, and already we hear of crosses with Lælia anceps and Sophronitis grandiflora, which should be interesting, and the last-named, at all events, should yield a striking hybrid. We hope the cross will succeed.

Since the above was written Mr. Broome has sent one of his twin-flowered scapes, which represents an even finer form than the one figured, as the flowers measure slightly over 6½ inches across the petals, the latter organs being 1½ inches broad. The colour is also rather brighter. A flower is also sent from the collection of John W. Arkle, Esq., West Derby, Liverpool, which is said to have been purchased as an imported L. pumila. It would thus appear that the two grow together, and there is a note in Messrs. John Cowan and Co.'s sale catalogue as follows :—" Lælia pumila (Cattleya pumila) or possibly a new species, . . . collected in a quite new locality where our man was searching for Lælia Jongheana. . . . Many old flower spikes show three or four flower seats. . . . Many of the plants resemble Cattleyas in size, others have bulbs little larger than a Sophronitis. . . . Many of them are strikingly like the beautiful Lælia Jongheana and Pinelli, which was originally found in the same range of hills." These remarks are interesting, and suggestive in this connection.

ODONTOGLOSSUM CRISPUM OAKFIELD SUNRISE.

A FLOWER of a most remarkable Odontoglossum has been sent from the collection of T. Baxter, Esq., of Morecambe, which received an Award of Merit from the R. H. S. on March 13th, under the name of O. crispum Oakfield Sunrise. In has since been figured in the *Gardeners' Chronicle* (1900, xxvii., p. 181, fig. 58), where it is explained that it was exhibited as O. c. Surprise, but as that name had previously been used the above was substituted for it. It is no trivial variation, but a strikingly distinct form, which clearly owes its character to some abnormal development. Each petal bears a large, very irregular, deep brownish-red blotch, together with a few detached spots, which contrast strikingly with the unblotched sepals and nearly unblotched lip. The column is somewhat abnormal, especially the wings and sides of the stigma, which suggests an analagous development to that found in Cattleya intermedia var. Aquinii (p. 73, fig. 9). The lip, however, is narrow, and the crest not strictly normal. Altogether it is a quite unique form, and will doubtless be taken special care care of. It will be interesting to see it again when next it flowers.

R. A. R.

CYMBIDIUM × GAMMIEANUM.

TOWARDS the end of last year a Cymbidium flowered in the establishment of Messrs. F. Sander and Co., St. Albans, which I succeeded in identifying with Cymbidium Gammieanum, and the question has arisen as to what is its origin. Mr. J. O'Brien wrote: "A new Cymbidium, which is generally supposed to be a natural hybrid, or a hybrid raised in England which has got mixed with imported plants, is flowering in several collections; for in two of the instances that have come under my notice the plants were purchased among Cymbidiums imported by Messrs. F. Sander and Co., St. Albans, who doubtless obtained them from the Sikkim Himalaya, where they have a collector of new types of Cypripedium insigne and other desirable plants." He then goes on to compare it with a narrow petalled, unstriped Cymbidium × giganteum with more flowers on the raceme (*Gard. Chron.*, 1899, xxvi., p. 409). It was originally described by King and Pantling as a species in 1896 (*Journ. Asiat. Soc. Beng.*, lxiv., p. 339), and afterwards figured in the "Orchids of the Sikkim Himalaya" (*Ann. Roy. Bot. Gard. Calc.*, viii., p. 193, t. 257), where we read: "The colour of the flowers in this species is a dirty yellow flushed with brown, and with brown lines; the lip, however, is of a brighter yellow and has brown lines on its side lobes. Individuals with flowers of a paler yellow are, however, very common, and these have usually densely flowered racemes, like C. elegans, Blume; while the plants with dirty yellow flowers have lax racemes, suggestive of those of C. longifolium, Don. This species, though common in Sikkim, has hitherto remained unnamed. It has been suggested that it may possibly be a natural hybrid between C. giganteum and C. elegans, as its flowers combine the characters of these species." This, at all events, shows that the plant is a native of Sikkim, and not raised in England, but, after comparing it with the three species mentioned, I believe it is a natural hybrid between C. elegans and C. longifolium. It is about as intermediate between them as it well could be, and I fail to find any trace of the hairy lip of C. giganteum, which in other respects does not agree so well with the characters of C. Gammieanum as does C. longifolium. Mr. Pantling tells me that the flowers are regularly visited by bees, which carry the pollinia about, and as the species now suggested as parents grow together, there is no inherent improbability about the matter—rather the reverse. Curiously enough, it is said to be common, though the variability mentioned is just what would be expected. The point about Cypripedium insigne may also be mentioned. Mr. Pantling tells me that he has never been able to find a trace of it in Sikkim, though, curiously enough, Mr. Maries has just found it in Nepal, and it seems to "jump" Sikkim. It may also be remembered

that Messrs. Sander did not include Sikkim in their interesting note on the distribution of C. insigne at page 15 of the present volume. Reverting to Cymbidiums, I suspect that this is not the only natural hybrid in the genus, for another very curious form is known, and C. × eburneo-Lowianum is also said to have been found wild, though I should like to know more particulars.

R. A. R.

CULTURE OF CALANTHES.

A USEFUL note on the Culture of Calanthes is given by Mr. A. Williams, Keele Hall Gardens, in a recent number of the *Gardeners' Chronicle*. The plants, after receiving a dry rest on the shelf of an Intermediate House, will now require potting. A suitable compost consists of one part fibrous loam, broken by hand, one part peat, one of leaf-mould, some sphagnum moss chopped fine, a small quantity of dried cow or horse dung, a few small crocks, and some silver sand. These should be mixed well together, and the mixture made warm before using. The most suitable sized pot is one of six inches in diameter, but for small pseudobulbs and certain purposes slightly smaller ones may be chosen; the larger bulbs going into the bigger pots. The pots should be half filled with clean crocks, over which some sphagnum moss must be placed, then the compost. One pseudobulb should now be placed in the centre of the pot, and some of the compost placed round it, which should be pressed in firmly, filling the pot nearly to the rim, and finishing off with a dash of silver sand. The pots should be placed in the stove, on a shelf near the glass, and the outsides should be sprinkled daily, but no water should be afforded the pseudobulbs till rooting begins. When the roots have reached the sides of the pots, some chopped sphagnum moss should be placed on the surface of the soil, into which the roots will pass in a short space of time. As the pseudobulbs begin to swell out, water may be afforded twice a week, and liquid manure occasionally; shading the plants from the direct rays of the sun. With this sort of treatment Mr. Williams has had spikes with from forty to fifty expanded flowers on them.

DENDROBIUM × AINSWORTHII AS A WILD PLANT.

IN recording the occurrence of a plant of Dendrobium × Ainsworthii among importations of D. nobile, about a year ago, I remarked that it was "not likely to remain an isolated example" (*ante*, vii., p. 99). Another plant has now flowered in the collection of Arthur E. Pattinson, Esq., 7, Faulkner Square, Liverpool, among some imported pieces of D. nobile, purchased from Messrs. John Cowan and Co., of Gateacre, and was immediately recognized as a natural hybrid. The flowers sent have the

well known shape and feathered blotch of D. × Ainsworthii, but the sepals and the upper part of the petals and lip are prettily suffused with light-rose purple, and thus it differs greatly from the former example, being about midway between the type and the variety roseum. It is an interesting confirmation of the former record, and Mr. Pattinson writes that there is no mistake about the matter, for he had previously no example of D. × Ainsworthii in the collection. The other imported pieces are typical D. nobile. Since the former note was written, I have been able to discuss the matter with Mr. Pantling—one of the authors of that excellent work, *The Orchids of the Sikkim Himalaya*—who tells me that in Sikkim the two parents grow intermixed on the branches of the same trees, though he has not met with an example of the hybrid. The present example is more likely to have come from Upper Burma, whence some of our recent importations are known to have been derived. Both parents are known to grow there, and it is quite likely that they also occur intermixed. It would be interesting to know if other examples have appeared.

R. A. R.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of this Society was held in the Coal Exchange, Manchester, on March 8th, when there was a very fine display of Orchids. The members of the Committee present were W. Thompson, Esq., in the Chair, and Messrs. A. Warburton, C. Parker, J. Cypher, W. Stevens, R. Johnson, and P. Weathers (hon. secretary).

W. Thompson, Esq., Stone (gr. Mr. Stevens), showed Odontoglossum × excellens nobilior (F.C.), O. × King Alfred (F.C.), O. pulchellum Stevensii (A.M.), and Dendrobium × Sibyl superbum (F.C.) This exhibitor also staged a fine group, for which he was awarded a Silver Medal.

John Leeman, Esq., Heaton Mersey (gr. Mr. Edge), showed Lælio-cattleya × Empress of Russia (C. Mendelii × L. Digbyana), to which both a First-class Certificate and a Silver Medal was given, L.-c. × Ernesti (F.C.), Odontoglossum × excellens, O. × Adrianæ Meteor (A.M.), Dendrobium × Sybil (bigibbum × Linawianum) (F.C.), Dendrobium nobile Sanderæ (A.M.), D. × Rubens (nobile nobilius × splendidissimum), Cypripedium × Doncasterianum, and C. × Mons. de Curte. He also staged a very fine group, for which he received a Silver-gilt Medal.

T. Statter, Esq., Stand Hall (gr. Mr. Johnson), sent Dendrobium × Ainsworthii Statter's var., D. × splendidissimum giganteum (A.M.), D. × s. Stand Hall var., and D. Curtisii.

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), sent Lælio-cattleya × warnhamensis Charlesworth's var. (A.M.), and L.-c. × W., West Point

var. (F.C.) Both these varieties were derived from Lælia cinnabarina × C. Trianæ Normanii.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), sent Cypripedium × Shillianum (A.M.).

E. J. Sidebotham, Esq., Bowden (gr. Mr. Shiner), sent Cattleya Trianæ (A.M.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), sent Odontoglossum crispum Hecla (A.M. and Cultural Certificate), O. c. Rosy Gem, O. c. Gertie Baxter, O. × Andersonianum Baden-Powell (A.M.), O. × crispo-Harryanum, and O, × Ruckerianum, Oakfield var.

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), sent Lælia Jongheana gigantea (A.M.).

Mrs. Briggs-Bury, Accrington (gr. Mr. Wilkinson), sent Dendrobium × Rainbow (F.C.).

Mrs. Stanley Clark, Wrexham (gr. Mr. Edwards), sent Dendrobium × Cecilia, and D. × Waltoni.

Holbrook Gaskell, Esq., J.P., Liverpool (gr. Mr. Todd), sent Dendrobium Wardianum giganteum (F.C.).

H. Partington, Esq., Glossop (gr. Mr. Campbell), sent Cattleya Trianæ (A.M.), also a small group, for which he received a Vote of Thanks.

E. H. Seddon, Esq., Brooklands (gr. Mr. Milne), sent Lælio-cattleya × callistoglossa.

Mr. James Cypher, Cheltenham, showed Dendrobium × Rubens grandiflorum (F.C.), D. × Rainbow (F.C.), and a seedling Cypripedium × Murillo (A.M.). He also sent a good group, for which he received a Silver Medal.

Messrs. Linden & Co., Brussels, sent Odontoglossum × Adrianæ majesticum (A.M.), O. × A. tigrinum (F.C.), O. × A. castaneum (A.M.), O. × A. delicatum, O. × A. citrinum, and O. × A. pallens.

Mr. A. J. Keeling, Bingley, sent Cypripedium × Mons de Curte, C. × Bellona, Lælia Jongheana, and Dendrobium × dulce.

Messrs. J. Backhouse & Son, York, showed Cattleya Trianæ (A.M.).

Messrs. John Cowan & Co., Gateacre, showed Odontoglossum crispum "Surprise."

John Richardson, Esq., Altrincham, showed Lælia superbiens.

The show of Orchids at the meeting held on March 22nd was one of the best the Society has ever had. Ten groups and seventy separate plants were entered, and great difficulty was experienced in finding space for the numerous exhibits. The room was one blaze of bloom, and the two hours allowed for inspection were quite insufficient to do anything like justice to the numerous first-class varieties staged. The members of the Committee

present were Messrs. G. Shorland Ball (in the chair), Rappart, Parker, Dr. Hodgkinson, Messrs. Cypher, Holmes, Robson, and Weathers (hon. sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed Cymbidium × Ballianum, which was awarded a First-class Certificate last year by this Society, and is described on page 154 of our seventh volume. Dendrobium nobile virginale (F.C.), Lycaste Skinneri alba (F.C.), Dendrobium Wardianum ochroleucum, two well-flowered plants of D. × splendidissimum Leeanum, Aërides Huttoni, a good form of Cypripedium × Deedmanianum, C. × Sedeni candidulum, a very fine form of Phalænopsis amabilis (A.M.), Masdevallia Shuttleworthii, and Odontoglossum × Andersonianum. A Silver Medal was awarded to the group in which the above were included.

Thomas Statter, Esq., Stand Hall (gr. Mr. Johnson), staged a fine miscellaneous group, in which we noticed many good things, and to which was awarded a Silver-gilt Medal.

J. Leeman, Esq., Heaton Mersey (gr. Mr. Edge), staged a remarkably fine group, for which he was awarded a Silver-gilt Medal, and amongst which we noticed the distinct and beautiful Lælio-cattleya × Ernesti Baden-Powell (F.C.), L.-c. × E. Lord Roberts (F.C.), L.-c. × callistoglossa (A.M.), L.-c. × highburyensis (A.M.), Cattleya Trianæ Emperor (A.M.), C. × Louis Chaton, Lælia × Latona inversa, Cypripedium Argus Moensii × Leeanum, and Dendrobium × Ainsworthii intertextum.

D. B. Rappart, Esq., Liscard (gr. Mr. Nicholson), showed Denbrobium nobile (A.M.) and a very fine form of Lælia Cowani, which as here exhibited shows this new Lælia to be a very much better thing than is generally supposed (A.M.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed a very fine form of Cymbidium × eburneo-Lowianum (F.C.), a good form of Odontoglossum luteopurpureum (A.M.), O. crispum Rowland Baxter (A.M.), and a group, in which the above were included, which received a Vote of Thanks.

E. J. Sidebotham, Esq., Bowdon (gr. Mr. Shiner), showed a large form of Dendrobium Wardianum.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed Dendrobium × Ainsworthii intertextum with large flowers of excellent form and substance (F.C.), D. × Schneiderianum, Wells' var. (F.C.), D. nobile Ashworthii, D. × Cybele giganteum, D. × melanodiscus, and D. × Wiganiæ. This exhibitor also staged a group, and was awarded a Vote of Thanks.

Samuel Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Lælio-cattleya × Ernesti, Cattleya Trianæ Gratrixiæ, C. T. Backhouseana, Cypripedium × Cowleyanum (F.C.), C. × Gertrude Hollington, and C. × Wiertzianum.

Mrs. Gratrix showed Cypripedium × Vipani (A.M.) and Cattleya Trianæ Lady Roberts.

O. O. Wrigley, Esq., Bridge Hall, Bury, (gr. Mr. Rogers), showed Dendrobium × Rainbow (F.C.), D. × Wiganiæ, Lælia Cowani, and Cypripedium villosum giganteum (A. M). This exhibitor also staged a very fine group of miscellaneous Orchids, amongst which the numerous splendid specimens of Dendrobium Wardianum were very noticeable, and formed as a background quite a forest of bloom. A Silver-gilt Medal was awarded to the group.

Messrs. James Veitch and Sons, Chelsea, showed Lælio-cattleya × Dominiana langleyensis (purpurata × Dowiana) a flower with a magnificent dark labellum (F.C.), L.-c. Antimachus var. Coenea, L.-c. Thera (A.M.) Dendrobium × Imogen, and Cypripedium × Leonidas (A.M.). A group was staged by these exhibitors, including the above plants and many other good things, to which a Silver Medal was awarded.

Mr. James Cypher, Cheltenham, showed Dendrobium × Apollo alba, a very distinct and beautiful flower of large size and good in substance (F.C.). He also staged an effective group to which a Silver Medal was awarded.

Messrs. Backhouse and Sons, York, showed two very fine forms of Odontoglossum × Adrianæ, one with a white ground with numerous blotches and spots of dark maroon (F.C.), the other a yellow ground, similarly spotted and blotched (A.M.), also two good forms of O. crispum, O. × Andersonianum, Cypripedium Lawrenceanum × Rothschildianum (A.M.), and two plants of Lælia Jongheana, one of which was very good in colour, but on the small side.

Mrs. Stanley Clark, Wrexham (gr. Mr. Edwards), showed two hybrid Dendrobiums, splendidissimum × aureum, and splendidissimum × nobile nobilius.

E. Bostock, Esq., Stafford (gr. Mr. Gill), showed Cattleya Trianæ Corningii, Cypripedium × Fascinator nobilior (A.M.), and C. × tixallense (Lawrenceanum × Rothschildianum) (A.M.).

E. H. Seddon, Esq., Brooklands (gr. Mr. Woodbourne), shewed a nice plant of Dendrobium Wardianum ochroleucum (F.C.).

Mr. Lees, Stratford, showed a white form of Lælia anceps, which the Committee expressed a desire to see again when stronger.

Mr. John Robson, Altrincham, staged a fine group, in which we noticed many good Dendrobiums, and a particularly fine plant of D. Fytchianum, a charming variety when seen in such vigour. A Silver Medal was awarded.

Mr. A. J. Keeling, Bingley, also staged an interesting group, for which he received a Vote of Thanks, and amongst which we noticed a fine, dark-coloured Lælia Jongheana (A.M.), Dendrobium nobile nobilius, D. × Virgil, Odontoglossum × Wilckeanum, and O. Rossii rubescens.

PHALÆNOPSIS × SCHILLERIANO-STUARTIANA.

On January 23rd last Messrs. Hugh Low and Co., of Bush Hill Park, Enfield, were awarded a First-class Certificate from the Royal Horticultural Society for a very handsome Phalænopsis, bearing the name P. × Schilleriano-Stuartiana, and now we are able to give an illustration of it, from a photograph taken by Mr. G. I'Anson. We do not know its precise history, but it is a plant of great merit, and naturally bears a considerable

FIG. 18.—PHALÆNOPSIS × SCHILLERIANO-STUARTIANA.

resemblance to P. Schilleriana and P. Stuartiana, which are very nearly allied, though markedly different in colour. In this respect the present one is fairly intermediate, the flowers being white, prettily flushed with pale rose pink towards the base of the segments, and the lip and inner halves of the lateral sepals very prettily spotted with brown. The leaves are dark green with broad, irregular silver bands.

CALENDAR OF OPERATIONS FOR APRIL.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

A RISE of a few degrees all round should again be given this month. For the East Indian and Intermediate houses the temperature may now, roughly speaking, average from 5° to 10° higher than those advised for January, and even more on warm, sunny days. Not so, however, for the Odontoglossum house, for a temperature ranging between 50° and 60° should still be the aim, allowing, of course, a few degrees higher by sun heat.

For the atmospheric conditions, watering, and general management of the houses and plants, the advice given for last month will still be the best and safest to follow, for, as a rule, the outside general conditions vary but little. The sun, however, will gradually gain in power, consequently the shading of all the departments will now be required more or less, and for longer or shorter periods, throughout the day.

Attend also to re-potting, as advised in the previous Calendar, and allow no plant to pass the proper stage before doing it. A good many species will now be starting into renewed growth, so that the re-potting season may now be said to have fairly commenced, and almost each day something may be selected and attended to. This is work which requires to be done with some intelligence and thought, and the questions whether a plant really requires re-potting, and if so, is this the right time to do it, should be asked in every case. Many a house of Orchids has been ruined through nothing else but reckless and unscientific re-potting, and such a course is simply courting disaster. Once in two or three years should be quite often enough in most cases, because, if carefully watered, the compost and roots will remain perfectly healthy and sound for that length of time.

A few things, however, are best re-potted annually; for instance, Thunias and the deciduous Calanthes, and these should be done this month. Pot them up in good, rich, loamy soil, and give but little water for some weeks afterwards.

ODONTOGLOSSUM CRISPUM.—This is probably the most popular Orchid in cultivation, and I propose, therefore, to treat it rather fully this month. The cultivation of this lovely species is extremely easy when properly taken in hand, but otherwise it is apt to give a good deal of trouble. I advise all who would grow it to perfection to avoid too much coddling, which soon produces rootless, drawn-up specimens that are unable to bear a strong spike of bloom.

Some Orchids will grow fairly well under unsuitable treatment, but that is not so with the present species, and this fact renders it a very risky one for a new beginner to take in hand largely, before he has mastered the

most vital points in its cultivation. It is, however, often one of the first included in a newly-formed collection, on the grounds that it is a cool-growing species. I will now describe what I have found to be the most successful treatment. It may or may not quite tally with the methods of some experienced growers, but on the whole I think it will be found pretty correct, and I can conscientiously recommend its adoption by those who wish to succeed.

THE HOUSE.—I greatly prefer a little, low-built, span-roofed house, running north to south, either wide enough to admit a centre, step-like stage, in addition to the side stages, or with the latter only. It does not much matter which, though for preference I should select one with the centre stage. Such a span-roofed house, however, is not absolutely necessary, for they may be grown in any other shaped house, and it may be in almost any position from due south to north—the management, of course, varying accordingly. But, whatever the structure selected, the means of ventilation both at top and bottom must be ample, and the stages must be so arranged as not to be too far away from the roof glass. The furthest point should not be more than 4 feet, and the nearest point not less than 1 foot from the glass. I great prefer stages of an open nature, that is to say, formed of slats of wood, with a space of one or two inches left between each slat, so that the air can circulate freely up between the plants. This question of open stages I consider of great importance, if really good results are to be obtained. The air plays a most vital part with these essentially air-loving plants, and the freest circulation which the outside conditions permit is at all times of the utmost importance. It has sometimes been thought that the principal point necessarily lay in the keeping of the house and the plants in a particularly wet and humid condition, because of the rains and the exceptionally heavy dews of its native habitat. This explains the origin of closed stages—covered with moisture-retaining material and kept constantly saturated—on which the plants were stood. The idea, however, has proved to be wrong and misleading. I do not advise anyone who may be growing fairly good plants under such conditions to suddenly change his methods for mine, still I am quite convinced that the idea of closed stages is wrong in principle. It is right, of course, to introduce, especially in summer, the large supplies of moisture which they in nature so much enjoy, but we must also allow the air to play its counteracting part in our houses, just as it does in their native trees at home, and it is quite unable to accomplish this when the plants are placed on air proof stages in pots. The air should circulate around and beneath them as well as above, and in order to grow hardy, healthy plants, I strongly recommend open woodwork stages.

SUMMER TREATMENT.—The treatment during the summer months is

extremely simple, and consists principally in shading well from the sun's rays, admitting large volumes of air both night and day whenever the outside conditions are at all seasonable, and keeping plenty of moisture distributed about the plants and about the house. But, fond of moisture as O. crispum undoubtedly is, the compost in which it is growing should not be kept continually in a state of saturation. Mr. Robert Thompson has told us that even at Bogota there is a dry season, and I have proved beyond doubt that it does not pay to keep the plants continually saturated under artificial cultivation. There seems something unnatural about it. O. crispum is not found growing in bogs and marshes, but high up in the branches of trees, exposed to the full breezes, where it is morally certain they must sometimes get dry, roots and all. That they like water and cannot get on for long without is well known, but I like to see my crispums get dry at the roots before I again water them; the watering they receive in the meantime is overhead syringing with tepid water, about twice daily. This syringing is sufficiently heavy to thoroughly wet the foliage, and to moisten the surface of the compost, but not heavy enough to saturate the whole mass.

WINTER TREATMENT.—The treatment is also very simple in winter. A temperature of from 50° to 60° should be generally had if possible. It may go a little higher in bright, warm weather. or it may go lower, it may go to 40° even in very cold weather for short periods, when much fire heat is wanted, because with the extra fire heat the atmosphere would be sure to be rather dry, even though the house might be damped down about once a day. During winter, ventilation should be freely given, both night and day, when the weather outside is mild and damp, but less when it is colder, and then by means of the bottom ventilators only. There will also be periods when it is so cold that it is best to keep all ventilators tightly closed. Keep much less moisture about the house in winter than in summer. When the weather is mild and damp, and but little if any fire heat is wanted, as is often the case, whole days may pass by without it being necessary to damp down or water at all—the outside air, if allowed to enter, being sufficiently charged with moisture. At this period one should be particularly careful not to over-water at the root. Make a point of keeping the whole of the plants—no matter in what stage of growth they are—on the dry side. Do not, however, keep them dust dry, so as to cause excessive shrivelling. Those among them that are forming their growth should have a very little more water than those which have completed their pseudobulbs—just enough only to keep them going steadily along. If the house is well exposed to light and air, it is a good plan to follow the practice of over-head syringing in winter also, doing it in lieu of root watering, and letting the plants get pretty dry before the operation, and choosing the morning of a

bright day, so that the foliage may to some extent again dry up before night. If the house has a northern aspect, where the sun is unable to reach it, I would advise greater caution in this respect. When it is necessary to employ a large amount of fire heat to keep up the temperature, then guard against excessive drought atmospherically, by damping down the floors and stages once or twice a day.

O. crispum, to be well grown, must be hardily grown, and with this end in view we must subject them to the treatment most likely to bring it about. Of course we must shade from the sun's rays during summer, but avoid shading more than is really necessary. Do not, for instance, employ a shading permanently affixed, and which cannot be removed during dark or rainy days, and during the evenings when the sun has lost its power, or you will get long-drawn-up, spindly foliage, unable to support its own weight, or the centre rib will break here and there, causing the leaf to fall about in an ungainly manner, which of course should not be. The foliage should rather be short and standing erect without the aid of any support whatever, and, instead of being deep green in colour, it is none the less a healthy sign to see it mottled here and there with a reddish or a bronzy tint. This state of affairs can only be brought about by exposing your plants to as much light as possible, short of actual sunshine, and to as much air as possible, compatible with their well known partiality for moisture, and to give them a position not too far away from the glass. The more of such treatment they receive, the better will they be able to successfully withstand the slight checks of variable climate. If the plants have been grown tender, they may at first appear to resent such treatment, they may possibly drop a few leaves, and the new growths may progress less quickly, but, rely upon it, the result will prove the best in the end.

Those who grow O. crispum indifferently will probably have noticed from time to time that the foliage has a decided tendency to become more or less marked or spotted with watery, black spots. Also that the tips of the leaves decay, and have to be trimmed occasionally to present a respectable appearance, and this happens principally during the winter months. This is a sure sign of previous wrong treatment, which has caused a weakened constitution, and it will also be a sign that the existing conditions are too wet or too cold, probably both, for as a rule the latter produces the former. It is frequently brought about during winter when, instead of having slight warmth in the pipes with air on, the house is insufficiently ventilated, in order to keep the thermometer to the desired figure without lighting a fire, which is a very bad system to follow.

Keep a sharp watch against insects, especially that insidious little yellow thrip, which is so small as to be unnoticeable to the unpractised eye until much mischief is done. On the least signs of it, fumigate with XL. All.

Another most important item is re-potting, and my previous remarks under this heading should be scrupulously adhered to. Never re-pot except when necessary, and only at the proper time, which is just as the new growth is pushing forth, and about an inch in length. There is no better compost than fibrous peat and sphagnum moss in equal parts. The pot should be drained one-fourth its depth only, which leaves room for a greater depth of compost, and for the roots. Pot rather lightly than otherwise, and avoid crushing the roots as much as possible, but always take great care to leave the plant firm, and quite unable to sway about, even if small sticks have to be used, for a plant which is loose and unsteady after being repotted never takes proper root again.

THE HYBRIDIST.

Epilælia × heatonensis.

This is a curious little hybrid, raised in the establishment of Messrs. Charlesworth & Co., Heaton, Bradford, between Lælia cinnabarina ♀ and Epidendrum Wallisii ♂. It is most like the latter in habit, having an erect, leafy stem, and, at present, a single terminal flower, which also is Epidendrum-like in character. The sepals and petals are linear-oblong, an inch long, and deep buff yellow, with a few red-brown spots on the latter. The lip is elliptical-oblong in shape, nearly an inch long, crisped in front, and the ground colour light yellow, much spotted and partially suffused with red purple on the lower half. Thus the characters of the Epidendrum parent preponderate very largely, except in colour, in which the influence of the seed parent is seen. Unfortunately, it has a most delicate constitution, and Mr. Charlesworth states that some of the plants have died outright, so that its future behaviour will be watched with interest.

Paphiopedilum × Juturna.

Under this name we have received from the collection of Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), a hybrid raised from Paphiopedilum × Orpheus var. Youngianum ♀ and P. Boxallii atratum ♂, which may be described as fairly intermediate between the parents, though scarcely an improvement on either. The dorsal sepal is rather reflexed at the sides, and, like several of its allies, develops a curious twist which does not improve its appearance. It is strong and vigorous, but rather undecided in colour, though other seedlings may show an improvement in this respect.

Paphiopedilum × Iphis.

This also was raised in the same collection as the preceding, the parents being P. tonsum ♀ and P. Argus ♂, which, fortunately, do not neutralize each other, and the result is a very distinct and pretty little hybrid. It

may be compared to a form of P. tonsum with the dorsal sepal rather reduced in size, more distinctly ovate, and more distinctly lined with green, and the petals distinctly spotted all over, and bearing a number of marginal ciliæ much like those of the pollen parent. The lip also approaches P. Argus in shape and colour. Thus it is fairly intermediate between the two parents, and, like them, rather light in colour. The seed was sown in January, 1895. Iphis was a Cretan girl, metamorphosed into a youth.

Paphiopedilum × Zalmoxis.

This also was raised by Mr. Young, who gives its history as raised from P. × Williamsianum ♀ and P. × vexillarium superbum ♂, the seed having been sown in December, 1892. If the pollen parent had been recorded as P. venustum it would have been much easier to understand. Of course, P. × Williamsianum (which Mr. Young also sends) is half venustum, and a second cross with the same would have raised the amount in the hybrid, both in flower and leaf. Compared with the seed parent, the dorsal sepal is proportionately broader and less acute, the petals broader and shorter, coloured like venustum at the apex, and bearing several largish brown spots near the base, and the lip shorter and more distinctly veined. There is no obvious resemblance to P × vexillarium, or to its parents, P. Fairrieanum and P. barbatum, yet Mr. Young expresses himself as confident of the parentage as stated, and does not see the possibility of its being a stray seedling. He has, however, three other plants, which may throw more light on the matter. In any case, it is a decided improvement on the seed parent, and, being much larger than P. venustum, may be a considered as a decided acquisition.

Cattleya × Goossensiana.

A handsome hybrid raised by Mr. A. A. Peeters, of St. Gilles, Brussels, from C. Schilleriana ♀ and C. Gaskelliana ♂, and which may be briefly described as bearing a great resemblance to the natural hybrid C. × Whitei, whose parents are C. Schilleriana and C. Warneri. The seed is said to have been sown in June, 1896, and the plant flowered in October last, so that if the record is correct it probably constitutes a record for quickness of flowering in the genus. It is figured in a recent issue of Cogniaux and Gossens *Dictionnaire Iconographique des Orchidées*. It is a very interesting and beautiful plant.

ERRATA.

Lælio-cattleya × Cranstounæ.—This is the correct spelling of the name given at page 19 of our January issue as L.-c. × Cranstonæ. A similar mistake was made in the spelling of the personal name.

Paphiopedilum × Quirinus.—P. × Quinirius (page 72) should be P. × Quirinus.

ORCHIDS AT THE LINNEAN SOCIETY.

At a meeting of the Linnean Society, held at Burlington House, Piccadilly, on March 15th, Mr. R. A. Rolfe, A.L.S., exhibited a series of Paphiopedilum capsules obtained in the collection of Reginald Young, Esq., of Sefton Park, Liverpool, together with coloured drawings of flowers of the different kinds. Mr. Rolfe pointed out that some months previously Mr. Young had sent him a photograph showing a plant of Paphiopedilum concolor carrying seven capsules, which varied considerably between themselves, and, as they had been obtained by hybridising with various other kinds, the question arose whether the variation might be due to the influence of the pollen parent, as had been recorded in the case of some other plants. No opinion could be formed on this point without knowing what the capsules of the different pollen plants were like, and this information not being forthcoming, he had suggested that Mr. Young should make a few test experiments with common species of which several flowers were available at the same time. Two such species were therefore selected, and the pollen of two flowers was carefully transferred, so as to effect the cross and the reverse cross; and at the same time a flower of each parent was carefully self-fertilised so as to show what the normal capsule was like. The process was repeated with several pairs of species so as to minimize the risk of failure (for a single failure would break the series to which it belonged). Of course there were some failures, but three complete sets of four capsules each were obtained, two of which were exhibited. These were, normal capsules of P. Mastersianum and P. tonsum, together with hybridised capsules of each, and the same with P. insigne and callosum. The two normal capsules were markedly distinct in each case, and the hybridised capsules each conformed to its own type, so that the influence of the pollen parent seemed to be entirely negative. In the second case, normal seeds from each parent, and hybrid seeds, were shown under the microscope, and here again the normal seeds were markedly distinct in shape and colour, and the hybrid seeds conformed to the type of the seed parent, so that here also no influence could be traced. If the hybrid seeds germinated, the resulting plants would, of course, be intermediate between those of the two parents in the capsules, as well as in the leaves and flowers, in proof of which a few sets of capsules were shown, together with coloured drawings, both of the hybrids and their parents. The seven capsules of P. concolor above alluded to were also shown, and of these an account was given at page 331 of our last volume. The present experiment, however, suggests that the differences between these capsules was the result of natural variation rather than of any direct influence exerted by the respective pollen parents.

DENDROBIUM NOBILE VIRGINALE.

SEVERAL other albinos of Dendrobium nobile have appeared since the chaste and beautiful D. n. virginale flowered in the collection of Mr. T. Rochford, of Broxbourne, a figure of which is here given. Those which we have seen were not equal to the original in the size of the flowers, though what they might become with good culture remains to be proved. Any albino o such a useful species as D. nobile is, of course, an acquisition, but it will be interesting to compare later arrivals with the original, which, it may be added, measured $3\frac{3}{4}$ inches across the petals, so that the figure is natural size.

FIG. 19. DENDROBIUM NOBILE VIRGINALE.

EPIDENDRUM ELONGATUM.—Some species of Orchids are notoriously variable, and the following note by Mr. E. Im. Thurn is interesting in this connection. Speaking of the Eldorado swamp, on Mount Roraima, Mr. Im. Thurn alludes to the beauty of Epidendrum elongatum, Jacq., "its stems varying in height from one to eight feet, its verbena-like clusters of flowers varying in colour in different plants, some pale yellow, some fawn colour, many pure rich pink, dark purple, and even mauve."—*Trans. Linn. Soc.*, ser. 2, ii., p. 263. The species is in cultivation, but evidently shows to better advantage in a wild state.

ODONTOGLOSSUM × WENDLANDIANUM.

A PLANT of the handsome Odontoglossum × Wendlandianum has appeared in the collection of W. Thompson, Esq., Walton Grange, Stone, and Mr. Stevens suggests that it may be a hybrid from O. Pescatorei. Both the previous records pointed to some form of O. crispum as one of the parents, and the purple suffusion, I thought, must have come from that species. It is, however, very pronounced also in some forms of O. Pescatorei, and as the lip of the present example is decidedly pandurate in shape, the question arises whether, after all, the latter may not have been one parent. The other is probably O. crinitum, as pointed out last year (*ante*, vii., p. 168), for the crest is broken up into numerous filaments, and other details are in agreement. But we do not know precisely where the latter comes from, and it illustrates very clearly the difficulty of ascertaining the origin of some of these curious natural hybrids. The flowers are larger than in O. crinitum, rather crowded, the acuminate sepals and petals suffused with rose purple, and bearing numerous minute dots. The lip is light yellow, with few spots, and the column-wings slightly cirrhate in front, and nearly entire behind. I am not sure if the history of the plant can be traced, but it would be very interesting to clear up its origin.

R. A. R.

LÆLIA COWANI AND ITS ALLIES.

THE note on Lælia Cowani, at page 78, has, fortunately, brought out some new facts respecting it. It is flowering finely in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno, together with L. flava and L. harpophylla, and Mr. Broome accordingly sends spikes of each, and points out that the lip of L. Cowani has a recurved front lobe, in this respect resembling L. harpophylla. Continuing the comparison with living flowers, I find several other intermediate characters, which suggests the possibility of L. Cowani being a hybrid between the other two. This led me to look into the matter further, and the results are certainly interesting. The plants were sold about the end of 1898, and on looking up the Catalogue, I find it stated:—"The plants look like a hybrid between L. harpophylla and L. cinnabarina, the stems and leaves resemble the former, and the enlargements at the base of the stems the latter. . . . The flowers are of a bright golden yellow, and are produced on fine spikes of from five to twenty-five on each." If L. flava be substituted for L. cinnabarina, there is some plausibility in the suggestion, and it would be interesting to know how far the species grow together. In February, 1890, Messrs. Seeger and Tropp, of East Dulwich, sent to Kew a flower which they thought must be

a hybrid between L. flava and cinnabarina. I took it for a form of the latter, and did not note the colour, but now I see that the lip is still more like Cowani. The plant is said to have borne six spikes, and others from the same collection are said to have been similar. A month later, Messrs. Linden, of Brussels, sent a flower from a plant said to have been found among cinnabarina, which was typical L. flava. In March, 1894, a plant flowered in the collection of Lord Rothschild, Tring Park, which had been imported with L. flava, and was thought to be a scarlet form of it, though I placed it as a form of L. cinnabarina. A year later, it was exhibited under the name of L. flava aurantiaca, and received an Award of Merit from the R.H.S. (*O. Rev.*, iii., p. 159.) Lastly may be mentioned a plant from the collection of Walter Cobb, Esq., Dulcote, Tunbridge Wells, which is grown under the name of Lælia harpophylla var. dulcotensis, and is said to have the true harpophylla habit, though the flowers are orange-coloured, a marked deviation from the type. L. flava and L. cinnabarina are known to be natives of the Brazilian province of Minas Geraes, but the precise habitat of L. harpophylla seems to be in doubt. Two localities are indicated with a "?" on Messrs. Veitch's map, and the most probable one is near where the other two occur. The foregoing notes, at all events, suggest that some of them grow intermixed, and it would be interesting to have more exact evidence on the subject. There is, at least, a suspicion that natural hybrids may occur, but they seldom appear in quantity as L. Cowani has done, and at present we must consider the latter as an imperfectly-known local form.

R. A. R.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE usual fortnightly meeting of the Royal Horticultural Society was held at the Drill Hall, James Street, Westminster, on March 13th, when Orchids were again well represented. The members of the Orchid Committee present were:—J. Gurney Fowler, Esq. (in the chair), and Messrs. H. Ballantine, H. J. Chapman, N. C. Cookson, De B. Crawshay, J. Douglas, J. T. Gabriel, E. Hill, H. Little, H. T. Pitt, J. W. Potter, F. Sander, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (hon. sec.).

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), staged a splendid group of hybrid Dendrobiums, in which D. × Ainsworthii and its hybrids were represented by numerous well-grown and finely-flowered examples. Among other good hybrids a finely flowered example of D. × Schniederianum was conspicuous. A Silver Flora Medal was awarded to he group.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), staged a choice little group, to which a Silver Banksian Medal was given. It contained several beautiful forms of Cattleya Trianæ, the chaste Cœlogyne cristata alba, Odontoglossum × Adrianæ, O. Hallii, some good O. crispum, the richly-coloured Lælia harpophylla, &c.

Baron Sir H. Schröder, The Dell, Staines (gr. Mr. Ballantine), sent Odontoglossum × elegans Eastwood Park var., a very large and handsome form, to which a First-class Certificate was given. The typical form was also sent for comparison.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent the beautiful Dendrobium nobile virginale, a particularly fine D. n. Cooksonianum, and the handsome D. × Burberryanum (Findlayanum × Dominianum), the latter receiving an Award of Merit.

T. Baxter, Esq., Oakfield, Morecambe (gr. Mr. Roberts), sent Odontoglossum × crispum Oakfield Sunrise, a very remarkable form, described on page 106, to which an Award of Merit was given.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent a good typical form of Lælia Jongheana, to which an Award of Merit was given.

Mrs. Temple, Leyswood, Groombridge (gr. Mr. Bristow), sent Lælia Jongheana Templæ, a very fine, light rose form, with the front of the lip white, tinged with rose. It received an Award of Merit.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), sent a fine specimen of Dendrobium atroviolaceum, bearing about fifteen spikes of flowers. A Cultural Commendation was deservedly awarded.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), sent a pretty form of Odontoglossum × elegantius, from a recent importation.

N. C. Cookson, Esq., Oakfield, Wylam-on-Tyne (gr. Mr. Murray), showed three beautiful and distinct varieties of Phaius × Normani, namely, atrorubens, rich purple rose, with a dark purple lip; grandis, a large light form tinged with rose, and the lip rose, freckled with claret colour and bearing some yellow lines on the disc; and pulcherrimus, sepals and petals cream-white, flushed with pink, and the lip light rosy lilac.

R. G. Fletcher, Esq., Mount Harry, Brighton (gr. Mr. Garnett), showed a good form of Odontoglossum crispum, prettily tinted with rose and spotted with brown.

Arthur Hay, Esq., Oakley Park, Eye, Suffolk, sent fine cut spikes of Dendrobium atroviolaceum and D. Johannis.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent a good light form of Cattleya Trianæ and Cypripedium × Thompsoni inversum.

His Grace the Duke of Richmond and Gordon, Goodwood (gr. Mr. Fisher), showed a very fine form of Dendrobium nobile.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed Cypripedium × Boxallo-Rothschildianum, in which the characters of both parents are represented.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), staged a small group consisting chiefly of Dendrobiums, and including a good bright yellow form of D. aureum.

A. H. Wingfield, Esq., Ampthill (gr. Mr. Empson), sent some seedling Cypripediums.

Messrs. James Veitch & Sons, Chelsea, sent Dendrobium × Imogen, with pretty, pale yellow flowers, together with Lælio-cattleya × Pisandra, and the richly-coloured L.-c. × Antimachus var. Coenea.

Messrs. Hugh Low and Co., Bush Hill Park, staged a pretty group, including Cymbidium eburneum, Dendrobium × Dominianum, the pretty little D. barbatulum, a fine, well-flowered example of D. Brymerianum, D. nobile murrhiniacum, D. × Rubens grandiflorum, D. Wardianum Lowii, D. Madonnæ, some good Cypripediums and other plants.

Mr. J. Cypher, Cheltenham, sent a good group of Dendrobiums, including D. nobile nobilius, D. n. Cooksonianum, good forms of D. × Ainsworthii, D. × Wiganiæ, D, × Luna, and several forms of the pretty little D. × Ethel, varying from white to rose-pink, with a darker disc. The handsome Masdevallia Veitchiana grandiflora was also included, and a pretty form of Cypripedium × Murillo.

Mr. H. A. Tracy, Twickenham, showed a good, brightly-coloured form of Cattleya Trianæ.

There was a falling-off both in the number of exhibitors and exhibits at the meeting on March 27th, which was doubtless owing to the very cold winds, but the quality was excellent. The members of the Orchid Committee present were:—J. Gurney Fowler, Esq. (in the chair), and Messrs. T. W. Bond, H. J. Chapman, J. Colman, De B. Crawshay, E. Hill, A. Hislop, J. Jaques, H. Little, H. T. Pitt, J. W. Potter, H. A. Tracy, W. H. White, and W. H. Young.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged a very fine group, to which a Silver Flora Medal was given. It contained some good Dendrobiums, and among them D. × Ainsworthii splendidissimum, and some seedling D. nobile were noteworthy, the handsome Spathoglottis × aureo-Vieillardii, some fine Miltonia vexillaria, M. Roezlii, Lælia harpophylla, Epidendrum × Endresio-Wallisii, Vanda tricolor, a nearly white form of Cattleya Trianæ, Odontoglossum Hunnewellianum, and others, some good Cypripediums, and others. A well-flowered specimen of Dendrobium aggregatum received an Award of Merit.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent the pretty Lælia Cowani, Dendrobium × Melpomene (D. × Ainsworthii

splendidissimum × D. signatum), a charming thing, with pale primrose flowers, having a purple blotch on the lip's disc (First-class Certificate), and D. × Clio superbum, a very fine variety (Award of Merit).

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent a charming albino of Dendrobium nobile, called D. n. album [why not virginale?—see figure on page 121,—Ed.], to which a First-class Certificate was given.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), showed Odontoglossum × mulus Crawshayanum, the pretty yellow, densely dotted O. × Andersonianum pulvereum, a similarly spotted form with white ground, and some good forms of O. × excellens and O. triumphans, O. t. Raymond Crawshay being a fine, heavily-blotched form which received an Award of Merit.

J. T. Bennett-Poë, Esq,, Holmewood, Cheshunt (gr. Mr. Downes), showed a well-flowered specimen of Ada aurantiaca, which received an Award of Merit.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), showed several interesting things, of which Masdevallia × Pourbaixii, with six fine flowers, was noteworthy, and a richly-coloured form of Cattleya Trianæ, called Katie Wigan, received an Award of Merit.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), sent the handsome Dendrobium × Wiganiæ, a fine plant of D. nobile Cooksonianum, D. × Ainsworthii intertextum, and others.

Messrs. James Veitch and Sons, Chelsea, exhibited a pretty hybrid between Cypripedium hirsutissimum and C. Argus, in which the characters of the two species were well combined.

Messrs. Hugh Low and Co., Bush Hill Park, Enfield, staged a small but choice group, to which a Silver Banksian Medal was awarded. It included some good forms of Cattleya Schrœderæ, one of which showed some yellow suffusion along the middle of the petals, Dendrobium atroviolaceum, D. nobile Cooksonianum, D. barbatum, D. Findlayanum, D. Wardianum, Cymbidium eburneum, Odontoglossum × Andersonianum, Oncidium varicosum Rogersii, and others.

Messrs. F. Sander and Co., St. Albans, also received a Silver Banksian Medal for a small choice group, including some good forms of Odontoglossum crispum, the handsome Miltonia Warscewiczii var. Weltoni, Cirrhopetalum picturatum, Phaius Blumei var. Bernaysii, the handsome Cypripedium × Svend Brunn (Lowii × Curtisii) bearing three flowers, and other good things.

Mr. A. J. Keeling, Cottingley, Bingley, showed three forms of the handsome Lælia Jongheana.

NOTES.

MEETINGS of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on April 10th and 24th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on April 12th and 26th. The Committee meets at noon, and the exhibits are open to inspection from one o'clock until three p.m.

A beautiful raceme of Phalænopsis × Ariadne (P. Aphrodite ♀ × Stuartiana ♂) is sent by Messrs. James Veitch and Sons, of Chelsea. The flowers are white with many red-brown spots and a little yellow tint on the lip, which is fairly intermediate in shape. P. × Mrs. J. H. Veitch (P. Mannii ♀ × Lueddemanniana ♂) is also sent, and is most like the seed parent in shape, but much larger, and lighter in colour.

The issue of *Indian Gardening*, for February 22nd, contains portraits of Mr. A. E. P. Griessen, Assistant Curator of the Royal Botanic Garden, Calcutta, and Mr. A. J. B. Gisseleire, superintendent of the Agri-Horticultural Society's Gardens at Alipur. The former is well known to our readers by his writings on Orchids, and a note about the latter will be read with interest.

Mr. Grisseleire is a Belgian, who, after studying horticulture at home, went to Messrs. F. Sander and Co.'s Nursery at St. Albans, and thence to Kew, finally going out to India on behalf of Messrs. Sander "in search of the lost Orchid, Cypripedium Fairrieanum, in the Khasia and Jaintia Hills, in Assam. His adventures in those wild regions, while in absolute ignorance of the languages of the country, would fill a volume. However, he found the natural habitat of several Orchids, among them Cypripedium Spicerianum, and returned to Calcutta more dead than alive, having contracted the terrible 'Kala-Azar' of Assam." On his recovery he went to Alipur, in 1896.

In reply to Mr. Godfrey's note at page 69, a beautiful photograph, showing a stem of Dendrobium Wardianum bearing thirty-nine flowers, is sent by W. G. Moore, Esq., of Pollockshields.

Seedling Dendrobiums are now becoming very numerous. A beautiful seedlin g derived from D. Wardianum and D. × Ainsworthii splendidissimum has flowered in the collection of the Right Hon. J. Chamberlain, M.P., and is apparently a variety of D. × Lutwycheanum. It is white with a rich, maroon-purple feathered blotch on the disc. Additional seedlings of D. × melanodiscus and D. × Cybele have also flowered.

ORCHID PORTRAITS.

CATTLEYA DOWIANA VAR. MOORTEBEEKIENSIS.—*Lindenia*, t. 688.

CŒLOGYNE DAYANA, Rchb. f.—*Lindenia*, t. 687.

CYPRIPEDIUM × ADRASTUS.—*Amer. Gard.*, xxi. pp. 150, 151, fig. 33.

CYPRIPEDIUM × ASHWORTHÆ.—*Journ. Hort.*, 1900, xl. p. 215, fig. 56.

CYPRIPEDIUM INSIGNE ODDITY.—*Gard. Mag.*, 1900, p. 135, with fig.

CYPRIPEDIUM × MONARCH.—*Garden*, 1900, lvii. p. 164, with fig.

CYPRIPEDIUM × MONS. DE CURTE.—*Garden*, 1900, lvii. p. 164, with fig.

CYPRIPEDIUM ROTHSCHILDIANUM.—*Gard. Chron.*, 1900, xxvii. p. 137, fig. 41.

DENDROBIÚM × BURBERRYANUM.—*Journ. Hort.*, 1900, xl. p. 239, fig. 64.

DENDROBIUM × PALLENS.—*Journ. Hort.*, 1900, xl. pp. 239, 241, fig. 65.

DENDROBIUM PRIMULINUM, Lindl.—*Lindenia*, t. 687.

LÆLIA × EDISSA.—*Journ. Hort.*, 1900, xl. pp. 194, 195, fig. 51; *Garden*, 1900, lvii. p. 175, with fig.

LÆLIA GOULDIANA, Rchb. f.—*Rev. Hort. Belge.*, 1900, p. 61, with plate.

LÆLIA JONGHEANA, Rchb. f.—*Journ. Hort.*, 1900, xl. p. 232, fig. 63; *Garden*, 1900, lvii. p. 202, with fig.

MILTONIA CANDIDA, Lindl.—*Lindenia*, t. 685.

ODONTOGLOSSUM CRISPUM IMPERATOR.—*Gard. Mag.*, 1900, p. 165, with fig. VAR. OAKFIELD SUNRISE.—*Gard Chron.*, 1900, xxvii. p. 181, fig. 58.

ONCIDIUM CRISPUM GRANDIFLORUM.—*Journ. Hort.*, 1900, p. 173, fig. 44.

STANHOPEA RODIGASIANA, Cogn.—*Bot. Mag.*, t. 7702.

TRICHOPILIA ALBOPURPUREA.—*Journ. Hort.*, 1900, xl. p. 173, fig. 45.

ZYGOCOLAX × LEOPARDINUS WIGAN'S VAR.—*Gard. Mag.*, 1900, p. 121, with fig.

ZYGOCOLAX × WIGANIANA.—*Gard. Mag.*, 1900, p. 121, with fig.

ZYGOPETALUM BALLII, Rolfe.—*Gard. Chron.*, 1900, xxvii. p. 149, fig. 47; *Gard. Mag.*, 1900, p. 143, with fig.; *Journ. Hort.*, 1900, xl. p. 215, fig. 55.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

G. M. L., Lincoln. Lælia albida, so if it really came from "Assam," it must have been a cultivated plant there.

R. Y., Liverpool. The stray seedling appears to be a form of Paphiopedilum × Orpheus, a hybrid between P. venustum and P. callosum.

G. B., Hamburg. Both forms of Gomeza crispa.

Photographs received with thanks. I. B. Zurich., O.O.W., W.G.M.

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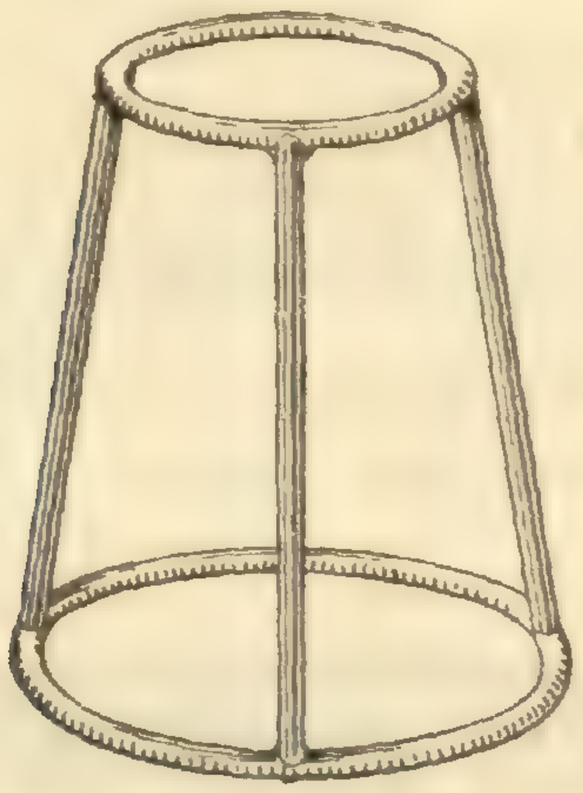

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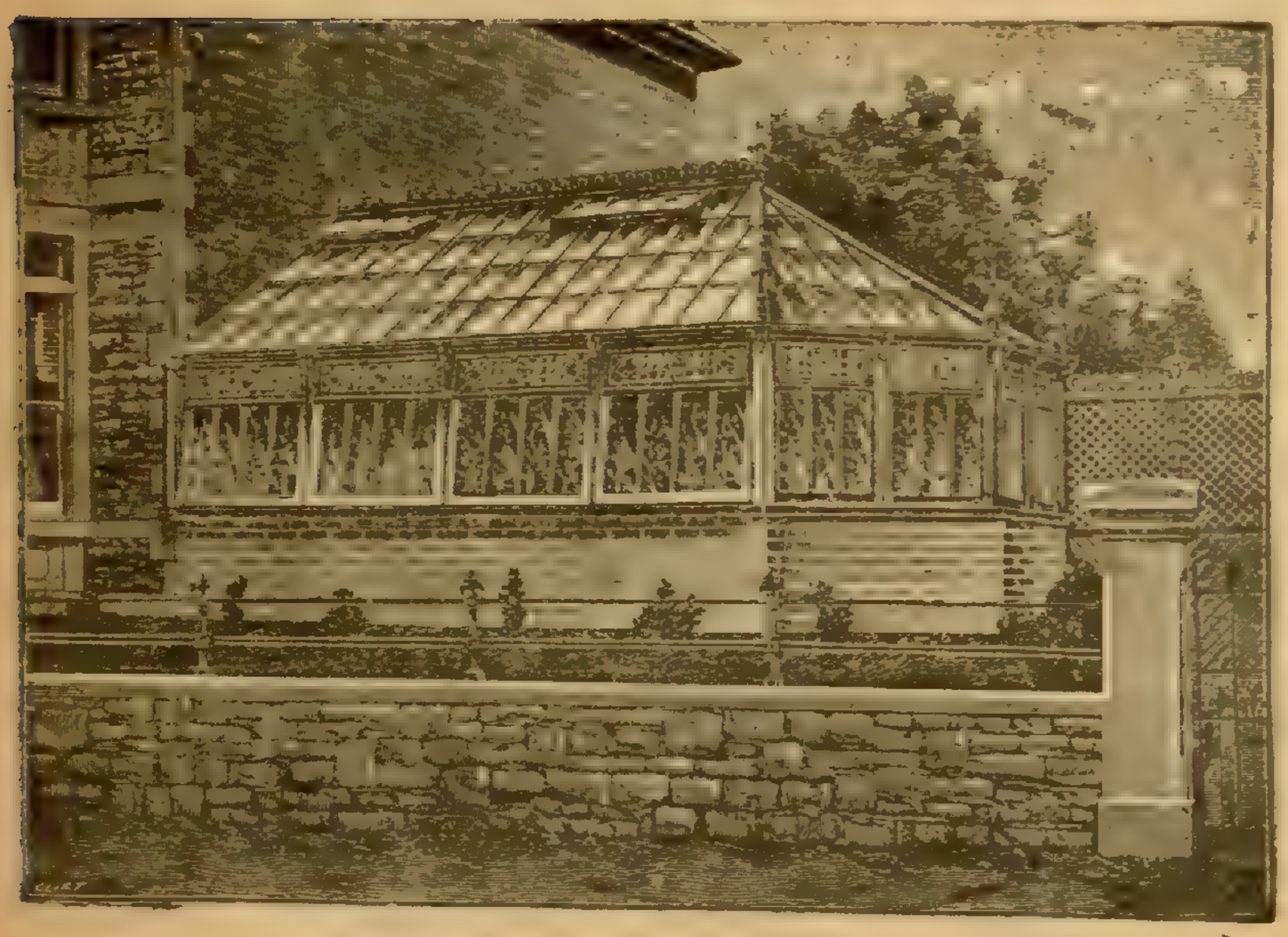

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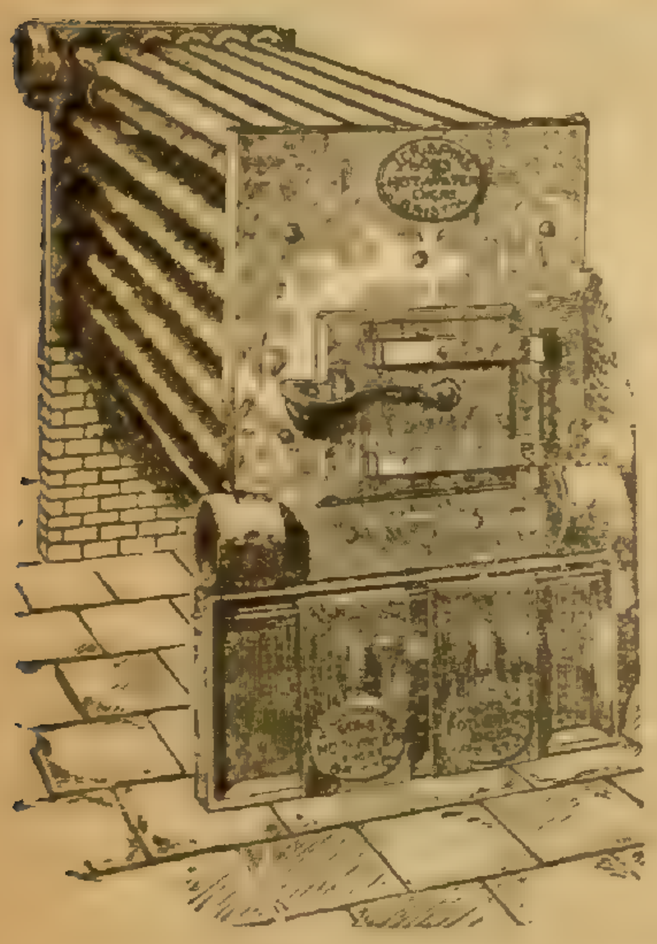

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VOL. VIII.] MAY, 1900. [No. 89.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. VIII.] *MAY*, 1900. [No. 89.

DIES ORCHIDIANÆ.

THE most interesting document which has come into my hands during the past month is the Hybrid Conference Report, just issued by the Royal Horticultural Society, and which contains a full account of the proceedings and exhibits at the Conference, and also the full text of the papers read and contributed. None of the papers are devoted exclusively to Orchids, but in two of them they figure largely, and there are many other allusions to them. Taking the report *seriatim*, I notice a good many experiments in the Orchid family alluded to by Professor Henslow in his paper on "Hybridisation and its failures." Mr. Hurst, in "Notes on some experiments in hybridisation and cross-breeding," has collected and summarized a large number of records, and his paper is illustrated with a number of excellent figures. Numerous important facts, many of which have already been recorded, are discussed, and the whole paper is deserving of careful study.

"Hybridisation viewed from the standpoint of systematic Botany," is the subject chosen by Mr. Rolfe, and records of a large number of wild hybrids which have also been raised artificially are collected together. Many familes besides Orchids are included, and of the latter no less than seventeen examples are given, six of which are figured, in two cases with both their parents. It appears that many botanists are still sceptical about the occurrence of hybrids in Nature, but Mr. Rolfe's paper should convert them, for not only does he show that natural hybrids are comparatively common in certain groups, but that they are frequently described as species, because their hybrid origin is unknown. The paper will doubtless be read with interest by both hybridists and botanists.

Speaking of this paper reminds me of a comment which I saw in the *Journal of Horticulture* at the time of the Conference (1899, xxxix, p. 50):—
"So many allusions had been made to the trouble caused to the systematic

botanist by the way in which the hybridist was continually upsetting his classification, that Mr. R. A. Rolfe's paper upon the subject was eagerly looked for, and people settled themselves comfortably in their seats as that gentleman mounted the platform. Mr. Rolfe did not, however, read his paper *in extenso*, but contented himself by giving a brief digest of the line he had taken. Surprise was expressed in some quarters when the lecturer proceed to make out a strong case for the hybridist. If hybrids did not exist in Nature, said he, then the systematist would have been justified in complaining of the way in which generic distinctions had been broken up. Natural hybrids undoubtedly did exist, and they were in fact common," in certain groups, and " some of them had been described by botanists as new species," though their hybrid origin was proved by the fact that they had been reconstructed by artificial crossing. Mr. Hurst had told them that instead of hybridists confusing the labours of botanists, the latter would have to go to the hybridist to clear up many of his difficulties, and speaking as a systematist he believed Mr. Hurst was right.

These sentiments are somewhat novel from the standpoint of systematic botany, but the lecturer at all events gave plenty of facts in support of his opinions. Perhaps the writer of the above paragraph expected him to defend the views of the old school of botanists who regarded hybridists and their work with suspicion, to say the very least, but at such a meeting this would have been literally to beard the lion in his den, and it is satisfactory to find that the old prejudice was largely based on misconception. To return, however to the Conference Report :—

Mr. Burbidge, in a general discussion, raises the vexed question of the nomenclature of hybrids (p. 205), and seems to think that the use of Latin names is responsible for the utter confusion which exists. But let him speak for himself :—" When we held the Narcissus Committee—in 1884, I think it was—there was a resolution passed that the plants should not receive Latin names. We all know that the adoption of Latin names has been a source of extreme trouble from the very commencement of plants being hybridised. In olden days they raised Calceolarias, Pelargoniums, Fuchsias, &c., and they all got Latin names. The consequence is that to-day you find these names in botanical books, and the parentage is kept back, and the consequence is that utter confusion exists. We really do not know a tenth part of what we ought to know about the hybridisations of the past, owing to the Latin names being used in the same way for hybrids as for real species. Dr. Masters some years ago struck a very good note when he named a hybrid, raised by Mr. Veitch, Philageria—a compound of the names of the two genera that were united in the cross. The same plan

is now carried out in other places. Sir Michael Foster was lucky in hybridising Iris, and very often he adopted the two specific names, or a portion of the two names. Iris Monspur was a cross between I. Monnieri and I. spurius. To a certain extent this principle works fairly well; but I really think that we should go further to the root of the matter, and do away with the Latin names altogether for hybrids and garden plants. I think if we passed the resolution adopted by the Narcissus Committee, only making it apply to all plants, we should meet the case."

Does Mr. Burbidge then ask us to believe that the use of Latin names is responsible for the fact that the origin of many early hybrids has been lost, and that all confusion will vanish at the touch of his magic wand? If so, he is very optimistic. I have already discussed the use of the vernacular pretty fully, and have shown that it is the cause of more confusion than the much maligned Latin names. The causes of our deplorable ignorance on the history of some of our early hybrids is due to very different causes, and the remedy lies in quite another direction, as I have already pointed out.

"Cumbrous names are an unmitigated nuisance, whether they refer to Orchids, persons, or aught else, and anything that can be done to reduce such to reasonable limits must necessarily be an improvement."—*Gard. Mag.*, April 7, p. 206. This is not a comment on my last month's remarks, but it might have been, and the sentiment is so admirable that I would fain annex it.

The late Mr. B. S. Williams many years ago wrote an excellent series of articles entitled "Orchids for the Million," which ultimately developed into his excellent *Orchid Growers' Manual*. But in his wildest flights of imagination it is doubtful if he ever dreamed of seeing Orchids distributed in penny packets. I have, however, received a Catalogue bearing the legend:—

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I naturally turned to the contents for further particulars, and find them stated as follows:—

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Should anyone feel disposed to experiment in this direction I hope he will let me know the result, for this is a step towards the popularization of Orchid growing which I had hardly anticipated.

ARGUS.

ORCHIDS IN SEASON.

Two very pretty forms of Odontoglossum × Andersonianum are sent from the collection of R. G. Thwaites, Esq., of Streatham. The first has a light yellow ground with several largish, deep red brown spots on the sepals and petals, and the lip deep yellow at the base, with a single blotch about the middle of the front lobe. The second is bright canary yellow throughout, with a trace of minute brown dotting on part of the segments. Accompanying them are four different forms of the popular O. crispum, including both spotted and unspotted forms.

A series of beautiful flowers is sent from the collection of T. Baxter, Esq., of Morecambe, by Mr. Roberts. Cymbidium × eburneo-Lowianum is a splendidly developed flower, taken from the plant which received a First-class Certificate from the Manchester Orchid Society on March 22nd. Odontoglossum luteopurpureum, which received an Award of Merit on the same date, is a fine example of the species, and O. crispum Roland Baxter, which was similarly distinguished, has pure white petals, but a few large red-brown blotches on the sepals and lip. The collection also includes other good specimens of O. crispum and luteopurpureum, O. triumphans, some prettily spotted O. × Andersonianum, O. Rossii, O. Hallii, Dendrobium nobile Cooksonianum, and a curious example of Phaius × Norman with two lips.

A series of beautiful hybrid Dendrobiums has been sent from the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, by Mr. T. Stafford. First may be mentioned a seedling from D. tortile × nobile, a large and handsome flower showing the characters of both parents, and which is, of course, a form of D. × Niobe. D. × Cybele is represented by four different forms derived both from D. nobile × Findlayanum and the reverse cross, and all differing slightly between themselves. Of D. × Ainsworthii two seedling forms are included, both having white sepals and petals, and a richly coloured blotch on the lip. Two seedlings from D. × Ainsworthii splendidissimum × D. nobile nobilius are both large and richly coloured, while a third, derived from a large light nobile crossed with D. × Ainsworthii splendidissimum, has not so much colour. All may be regarded as forms of D. × Rubens. D. × Ainsworthii crossed with D. Findlayanum is a notoriously variable secondary hybrid, of which numerous forms have already been named, which may be considered as forms of the original D. × melanodiscus. Four seedlings now sent have nearly white sepals and petals, slightly flushed with pink towards the apex, and the blotch on the lip is dark, with a little yellow shading at the margin. Lastly may be mentioned flowers of the pretty little hybrid D. × Burberryanum, in which the characters of D. Findlayanun and D. × Dominianum are combined.

Another interesting lot from the same collection contains a very pretty form of Odontoglossum × Adrianæ with white ground, and the sepals and petals well spotted with dark brown; and O. × A. Baxteri, a very large and handsome form, bearing numerous red-brown spots, which gained a First-class Certificate at the last meeting of the Manchester Orchid Society. O. crispum Baxteræ, which received an Award of Merit, has a very large irregular red-purple blotch below the middle of the sepals and petals, together with a few smaller ones, and a rosy suffusion in the sepals. One called O. c. augusta, which also received an Award of Merit, has a group of small red-brown spots on the white petals, and rather larger confluent ones on the sepals, so that it is quite distinct from the O. c. augusta which received a First-class Certificate at the Temple Show in 1896 (see pp. 192, 196 of our fourth volume). Other forms of O. crispum and O. × Andersonianum are also enclosed.

A very dark form of the pretty little Odontoglossum Hunnewellianum is sent from the collection of Mrs. Briggs-Bury, Bank House, Accrington, in which the sepals are nearly suffused with dark brown, except a few yellow markings near the base, together with the upper half of the petals.

A very brilliant form of Lælio-cattleya × highburyensis is sent from the collection of E. F. Clark, Esq., of Teignmouth, in which the deep crimson petals and lip contrast strikingly with the buff sepals.

PHALÆNOPSIS SANDERIANA AND ITS ALLIES.

A PHOTOGRAPH of the inflorescence of Phalænopsis Sanderiana is sent by Dr. A. W. Hoisholt, of Stockton, California, together with a beautifully dried flower, in which the original colour is well preserved. It is described as pinkish lilac, with rays of darker colour towards the margins of the petals, and the anterior halves of the lateral sepals and most of the lip white. Dr. Hoisholt alludes to the uncertainty expressed in the books as to whether the plant is a distinct local form or a natural hybrid between P. Aphrodite and P. Schilleriana, and thus a form of P. × leucorrhoda. In order to settle the question, he has crossed the species together, both ways, and has now a plant of P. Aphrodite carrying two pods, and one of P. Schilleriana carrying three pods, a little over three months old. We hope they will succeed, for they cannot fail to be interesting. Dr. Hoisholt further compares P. Sanderiana with its allies, and hopes that these notes will lead to further enquiry into its origin. This reminds us of a very interesting article on the distribution of the section Euphalænopsis in the Philippines, from the pen of Mr. C. Roebelen, the discoverer of P. Sanderiana, which appeared in the *Gardeners' Chronicle* a few years ago (1890, vii., p. 459), the substance of which it may be interest-

ing to reproduce, two of the names, however, being altered in conformity with the now accepted standard.

Mr. Roebelen commences by remarking that it is, undoubtedly, of great importance to botanists to have as much information as possible when describing a new species; its surroundings and its nearest allied neighbours being almost as necessary as the simple description of the plant itself. He then endeavours, as far as his own experience will allow, to give the exact distribution of the species of Euphalænopsis which grow in the Philippine Islands. The long chain of extinguished volcanoes, running from south to north, connecting the Moluccas with the Island of Formosa and Japan, seem to have had their part in the distribution of Phalænopsis, as almost all the known species lie in this line, and away from which they do not appear so numerously. Moreover, each well defined species may be connected with its own extinguished volcano, and around which it grows more numerously than elsewhere. Singularly enough, the few active volcanoes, although well-wooded to a great height, are almost destitute of Phalænopsis. Beginning at the southermost point of the Archipelago, lies the small island of Balut, at 6° N. lat., with its extinguished volcano, Sarangani. Here the typical form of P. Sanderiana grows—leaves green and flowers dark rose-coloured—and no other form is to be found on the island. Their area of distribution may be said to lie between the sea-level up to an elevation of 800 feet, which corresponds exactly with the limits of bamboos in these latitudes—the beginning of the fern region. Crossing the Channel to the Island of Mindanao, the second in extent of the Philippines, along the coast from the south point, Saragani to the west, as far as the volcano of Pollok, a white-flowered Phalænopsis grows, with silver-grey markings on the leaves, similar to those of P. Schilleriana, but not yet described as a distinct species, though often sent home amongst plants of P. Sanderiana. It is most likely that from here came the variety known as P. Schilleriana alba. Turning to the East, to the Bahia de Davao, from Sarangani to the River Hijo, from the very sea-shore up to the slopes of the volcano Apò, came all the Phalænopsis sent home as P. Sanderiana.

It is on this particular spot that so many varieties have been found having variation in the colour of their flowers and the markings of the leaves—the result, undoubtedly, of intercrossing between three different species, viz., P. Aphrodite, P. Sanderiana, and the white-flowered silver-grey-leaved species. In no other part of the Islands are so many species formed in such near proximity as there. Although P. Aphrodite and P. Schilleriana are to be found growing in close proximity to each other in the island of Luzon, yet they do not seem to intercross with such facility as the above-mentioned species undoubtedly do. On the north coast of Mindanao, from the south-west point of Zamboanga up to the River

Agusan, but not crossing that river, P. Aphrodite grows in great abundance, and amongst them in the Bahia de Iligan a singular variety of P. Aphrodite, with flowers more richly marked with yellow, and the plants are generally found growing in clumps together. The same island is also the home of P. Stuartiana, and we may give the valleys around the lagoon of Meinit as their favourite haunt. This lagoon lies at the north-east point of Mindanao at an elevation of a few hundred feet above sea-level, having its source in the very centre of a crater. P. Stuartiana is also to be found in great profusion in the very humid valley of the River Agusan, far into the interior of Mindanao until reaching the rivers flowing south, where some strayed P. Sanderiana may be found; hence natural mules between them have already appeared. So far, Mindanao, which in extent is the second of the archipelago, is the richest in species, but a great part of it is not searched yet, and there can be no doubt that some new species may yet appear.

P. Aphrodite grows all over the Philippine Islands, indeed, very few are entirely destitute of them, yet its cradle may be traced to the central part of Luzon, which is the greatest of the 100 Islands, and lies 300 miles north of Mindanao. The central part of Luzon, on the Pacific coast, and a few adjacent islands, are the only places where P. Schilleriana is to be found growing, and where it occupies amongst its congeners the smallest area, and distant from the home of P. Sanderiana, about 350 miles. The latter is considered to be a natural cross between P. Aphrodite and P. Schilleriana, which it may be botanically, but it seems to be too far off from at least one of its supposed parents for this to be likely. The several groups of volcanic islands connecting the Philippine Islands with Borneo, although included in the archipelago, yet, judged by their flora and fauna, more belong to Borneo; but here is found the link connecting the Phalænopsis of Borneo with those of Java. In the Tawi-Tawi group a form of P. Aphrodite grows, and in the island of Palawan the true P. amabilis (grandiflora) is found. From these islands a straight line down to Java may be traced, around which the different forms of P. amabilis are found.

It is interesting and instructive to have such a complete outline of the distribution of Euphalænopsis in the Philippines, as it helps us to understand which are local forms, and which natural hybrids, occurring where the others grow intermixed, and P. Sanderiana must be included among the former. The silver grey-leaved form we do not recognize—if, indeed, it has been introduced to cultivation—and the natural hybrids which occur with it do not appear to have been named, nor yet those mentioned between P. Stuartiana and P. Sanderiana.

It will be observed that the section Euphalænopsis is largely concentrated in the Philippines, the single exception being the original P. amabilis, usually known in gardens as P. grandiflora, and this occurs also in Palawan.

This species is very widely diffused, being found also in Java and some small adjacent islets, various parts of Borneo, Celebes, Buru, Amboyna, Timor, Ke island, and in another locality still further east. The allied P. gloriosa is a native of the Sulu Archipelago, and is not mentioned by Roebelen, though the supposed form of P. Aphrodite from Tawi Tawi is probably identical, but as the front lobe of the lip is very narrow, it would be better described as a form of P. amabilis. It is also interesting to note that P. Aphrodite has now been found at the South Cape, in the island of Formosa, a quite unexpected discovery.

This completes the distribution of species of Euphalænopsis, so far as at

FIG. 20. PHALÆNOPSIS APHRODITE. FIG. 21. P. SCHILLERIANA.
FIG. 22. P. × LEUCORRHODA. FIG. 23. P. × L. VAR. CYNTHIA.

present known, and it may be interesting to give a figure of P. × leucorrhoda (fig. 22) and its variety Cynthia (fig. 23), together with their two parents, P. Aphrodite (fig. 20) and P. Schilleriana (fig. 21). P. × Schilleriano-Stuartiana (figured at page 113) is presumably another wild hybrid, besides which there is P. × Schilleriano-gloriosa (described at page 4 of our fifth volume.). Of P. × intermedia and P. × Veitchiana only one parent belongs to Euphalænopsis. We should like to see examples of the other doubtful forms mentioned by M. Roehelen.

ORCHIDS AT HEATON MERSEY.

One of the Orchid collections of the Manchester district which has come rapidly to the front is that of John Leemann, Esq., of Heaton Mersey, from which so many fine things have appeared at the meetings of the Manchester and North of England Orchid Society. Five ranges of houses, of modern construction, and with the latest improvements, afford the varied conditions so necessary for the well-being of a large and varied collection of plants, and, under the skilful attention of Mr. Edge and his assistants, everything appears to be in thriving condition.

Odontoglossums, we found, were splendidly grown on the open stage system. In the first house entered was a fine collection of O. crispum. Selection is systematically practised, the poorer forms being taken out as they flower, and many choice ones obtained from other sources. The majority, however, were still in bud. We noted here splendid forms of O. triumphans and O. × Andersonianum.

An adjoining house was devoted to Cypripediums with Cattleyas and Lælias suspended from the roof, all being in good condition. Many of the former were in flower, among those noted being good forms of C. Lawrenceanum, villosum, and its variety aureum, the latter very richly coloured, C. Mastersianum, exul, barbatum, Mastersianum, Argus, Hookeræ Volonteanum, × Harrisianum superbum, × Creon, × Goweri, × selligerum, &c. Hybridising is carried on, for we noticed some good capsules, and of others the seeds had been sown.

A Cattleya range in two divisions contains a good representative collection in good condition, and many choice varieties and hybrids. Among those noted were many fine C. Mossiæ, a splendid C. M. Reineckeana, C. M. Mrs. E. Ashworth, with pretty slate-blue veining on the front lobe of the lip, C. Skinneri, a good series of Lælia purpurata, including a very fine L.p. prætexta with the apex of the front lobe white, a superb form of Lælio-cattleya × Canhamiana, and Epidendrum × O'Brienianum. Of choice forms not in flower Mr. Edge pointed out eight good plants of C. × Hardyana in thriving condition, C. Lueddemanniana Princess of Wales, C. labiata Peetersiana, C. × Octave Doin, Lælia × nigrescens, Lælio-cattleya × Wellsiana with a fine sheath, a very strong L.-c. × callistoglossa, and a lot of choice seedlings from various sources. Mr. Edge keeps the compost moderately dry, but gives plenty of atmospheric moisture throughout the growing season, a method of treatment which seems most suitable for this group of Orchids.

A third range is divided into an Intermediate house, and a Dendrobium house, the former of which contains a fine batch of Cymbidium Tracyanum, which is highly prized. There were also some good Lycastes, Anguloa

Clowesii, Odontoglossum citrosmum, and various others, including a thriving batch of Lælia pumila forms. The Dendrobiums include the principal kinds, and were in thriving condition, while Vanda cœrulea was suspended close to the ventilators and looked well. A good plant of Oncidium sphacelatum was in flower.

Another Cattleya house contained some good C. Mendelii in flower, a fine batch of plants of C. Schrœderæ, C. Trianæ, and others in various stages of growth. A good pod of C. Schilleriana × C. × Berthe Fournier should yield some interesting seedlings. C. Trianæ × Lælia cinnabarina, and a few others were also observed, but at present not much hybridising has been carried on in the collection.

Entering another house devoted to Odontoglossums, we found numerous flower spikes in various stages of development, and a few already expanded, some good O. Hallii and O. Pescatorei being among the latter. O. citrosmum carried a good hybridized capsule, which it was hoped, rather than expected, might yield seedlings, so difficult are these plants to raise. Cattleya citrina, on blocks, succeeded well on the walls of this house.

The uprights of the stages are fitted with saucer-like receptacles, which are kept full of water, and thus prevent the ascent of slugs and other vermin.

As the plants in the different departments come into flower, they are removed to the conservatory, where we found an imposing display of Cattleyas, Lælias, Odontoglossums, and Masdevallias, together with the richly-coloured Ada aurantiaca, and a few other things which we cannot attempt to enumerate in detail.

It may also be added that a Mexican house, chiefly for Lælia anceps and its allies, and another Odontoglossum house were in course of construction, so that the collection is still growing. We also noticed that both khaki cotton netting and lath roller blinds are used in different situations, and that electric light is laid on to the houses. Lastly, we may mention that Mr. Leemann has a fine series of paintings representing the gems of his collection, which we had the pleasure of looking through.

NOMENCLATURE OF VARIETIES.

THIS question becomes more complex daily, despite the continued efforts of a few to stem the tide of confusion and somewhat mitigate the evil. One has only to read the Orchid literature for a month or so, to see errors being continually made, frequently unintentional ones, through lack of knowledge of what has been previously done.

"Argus," at p. 97, is going to see what can be done to further ideas which I have long since advocated (which are practically done in all other

cults but ours), namely, a register, where all Orchids can be entered and recorded. I will not anticipate his ideas, but shall gladly read his conclusions. This Bureau of Information, as it would become, will be invaluable to all of us. At present, we have one authentic record of plants that are certified by the R.H.S. and M.O.S., viz., their paintings, but these are, as yet, rather inaccessible to the general body of Orchid growers, owing to there being in each case no Orchid expert in charge of them, who could at once point out the difference between them and a flower that might be sent up by post by its owner for determination. Therefore he takes the other course, and names the plant himself, placing it before the Committee, chancing an Award. Should he get it, the name stands good; if not, it may disappear at once, and, if the plant changes owners, in a majority of cases that name is never seen again. Here is one strong reason for a system of registration. There are many reasons for this change of name which I need not enumerate, but I know one that appeals to all of us; it is *a new variety*. It is but human to have a thing our neighbour does not possess, and if he owns a thing we have not, then let us do our best to share it with him. How many feel this, and act upon it?

In reply to "Argus," anent the similarity of varieties of Odontoglossum crispum, I admit there are a few that have almost identical "doubles," but even in them the experienced eye can find a difference sufficiently marked to justify a name for what I consider essential, the identification of one from another, for botanical or horticultural, as well as commercial reasons.

The R.H.S. Rules of Nomenclature are not applicable to these days of rapid movement, hence they have been almost totally disregarded. Though, scientifically, I deprecate the vernacular, I cannot but uphold it in certain cases of commemorative and dedicatory names. But I draw the line when it systematically brings Orchids to the level of florists' flowers. It is difficult to draw the line of demarcation between the needs for scientific and vernacular nomenclature.

All who are interested in this much-vexed yet little-remedied question will be anxious to know to what conclusions "Argus" comes, and, if he can devise a method that satisfactorily meets the need, he will have the support of all Orchid growers but those who wish "confusion worse confounded," and of these I hope there are none left now.

De B. CRAWSHAY.

I write to express my pleasure at your having agreed to give some consideration to the question of the nomenclature of varieties of Orchids, as stated in your second paragraph last month (page 97). Why should not the R.H.S. undertake to register all varieties worth naming? Then they could be sent at any season when in flower; but I would suggest a separate

"Registration Committee," because it seems to me that when exhibitors themselves are on the Committees, although, of course, they do not vote on their own exhibits, yet the committee appears to hesitate—to put it mildly—to do anything that may offend: *e. g.* (as noticed in your 6th par.), why did the Manchester Orchid Committee not cross out "Leeman's var." from the name card on the Dendrobium nobile virginale? I agree with you, what need for the addition? I have noticed before, that when a grower has a unique thing he exhibits it with some extra, unnecessary varietal formula attached, although it may have been recognized before under a distinct name. I do not speak from the point of view of the disappointed exhibitor, because I never exhibit, but I wonder where we shall be in a few years' time with all our varietal names, since, as time goes on, and finer varieties are intercrossed, who is going to remember them all?

That, however, to my mind is not so much the point of objection as the fact that everything now is given a varietal name whether it be worthy or not. Why cannot the Orchid Committees correct the name cards, using their own judgment, even if making no award, thus constituting in a way a Registration Committee. I think a printed list of varieties would be a boon, because we could then see which were really distinct: and why could it not be taken in hand at once? Those desirous of recording varieties exhibited some time ago could send them again, while varieties which have received awards of course need not be sent again. This is the sort of thing that I object to:—L.-c. × callistoglossa; L.-c. × callistoglossa ignescens; L.-c. × callistoglossa ignescens Argus' variety; L.-c. × callistoglossa ignescens Argusiana Kew Gardens variety; &c., *ad lib.*

I hope that you will be able to move the authorities to do something.

X.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING was held at the Manchester Town Hall, on April 10th, 1900, in conjunction with the Spring Show of the Royal Manchester and Northern Counties Botanical and Horticultural Society.

The members of the Orchid Committee present were:—Messrs. G. Shorland Ball (in the chair), Law-Schofield, Thompson, Leemann, Lovell, Baxter, Duckworth, Parker, Warburton, Holmes, Cypher, Upjohn, Johnson, Stevens, and Weathers (Hon. Sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed **Odontoglossum × crispo-Harryanum.**

W. Thompson, Esq., Stone (gr. Mr. Stevens), staged a magnificent group of Odontoglossums, excellently cultivated, and for which a Silver-

gilt Medal was awarded. It included the bright yellow O. × excellens luteum (F.C.)., O. crispum The Earl, a very beautiful and round form heavily blotched (F.C. and Silver Medal), O. × Andersonianum albo-maculatum, a very distinct form with yellowish-white ground spotted with claret, and a remarkably round form; O. crispum Victoria-Regina, a very pretty pink variety and well spotted with bright red (F.C.); O. × Andersonianum delicatum, O. Rossii giganteum, and many other remarkable varieties.

T. Statter, Esq., Stand Hall (gr. Mr. Johnson), showed Dendrobium nobile Backhouseanum, D. × Sybil, and Cypripedium Lawrenceanum.

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts) showed three good forms of Odontoglossum crispum, one of which received an Award of Merit, O. × Andersonianum Baxteri, O. × A. Gertrude Baxter, Denbrobium nobile Cooksonianum, and D. × splendidissimum grandiflorum (A.M.). A Vote of Thanks was awarded to the group.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), staged a very fine group, to which a Silver-gilt Medal was awarded, and amongst which were included a magnificent specimen of Dendrobium × Venus, one mass of bloom (Silver Medal and F.C.), Zygopetalum × Perrenoudi, a most beautiful form, good in size and with very dark lip (F.C.), Cypripedium callosum × bellatulum (A.M.), Cattleya Schrœderæ alba (A.M.), several other good forms of C. Schrœderæ, and some well-flowered Dendrobiums.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed a remarkably fine Dendrobium × Sybil superbum (F.C.).

E. H. Seddon, Esq., Brooklands (gr. Mr. Milne), showed a fine group, to which a Silver Medal was awarded, and amongst which were Dendrobium × Desdemona, D. nobile nobilius, D. × Thalia, D. × Apollo, D. × splendidisimum grandiflorum (A.M.), Cattleya Schrœderæ (A.M.), C. Mendelii, and C. × Louis Chaton.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), sent a select group of cut blooms, comprising many fine varieties of Cypripediums and Dendrobiums, and for which he was awarded a Vote of Thanks.

E. O. Schneider, Esq., Whalley Range (gr. Mr. Hunt), showed a fine specimen of Dendrobium thyrsiflorum (Cult. Cert.).

Mr. James Cypher, Cheltenham, staged a very extensive group of well-flowered specimens, including the rare and pretty Cymbidium Devonianum (Bot. Cert.), Dendrobium × Rubens magnificum, a large flower, but not so highly coloured as grandiflorum (A.M.) Sophronitis grandiflora gigantea (A.M.) and numerous good plants of Cattleya Schrœderæ, C. Mendelii and various Dendrobiums. A Silver-gilt Medal was awarded to the group.

Messrs. F. Sander & Co., St. Albans, showed a very fine form of Odontoglossum entered as O. crispum Mrs. Sander, but which appeared

to us to have some Adrianæ blood in it. The ground was white, slightly tinged with pink, and the petals and sepals were heavily blotched and spotted with claret, the form good and the spike carrying eight flowers (Silver Medal and F.C.), O. × cuspidatum nobilior, a flower of very good form with clear markings (A.M.), and O. × elegans St. Albans variety, an exceedingly fine form with greenish yellow ground spotted and blotched with dark claret (F.C.).

Messrs. Backhouse & Son, York, showed Odontoglossum × Ruckerianum, O. × Adrianæ, Dendrobium nobile Amesiæ, D. n. Virgil, in the way of Ashworthianum, D. Brymerianum, and several good Cattleyas. A Vote of Thanks was awarded for the group.

Messrs. Charlesworth & Co., Bradford, staged a very effective group, to which a Silver-gilt Medal was awarded, and amongst which were Cattleya Schrœderæ alba (A.M.), C. S. Prince Patrick, a form with red labellum, very distinct (A.M.), Odontoglossum crispum (? Adrianæ) Duke of Connaught, with white ground, heavily spotted with bright red-brown, and carrying a fine spike of fourteen flowers, a remarkably pretty form (F.C.), O. nebulosum album (F.C.), Epilælia × radico-purpurata, Lælio-cattleya × highburyensis, a fine pan of Sophronitis grandiflora, Phaius × Marthæ, and several good specimen Cymbidiums.

Messrs. Hugh Low & Co., Bush Hill Park, staged a select group, for which they received a Vote of Thanks, and amongst which we noticed Cattleya Trianæ Empress of India, a beautiful form with pure white sepals and petals and pink lip (F.C.), C. T. cœrulescens, a very round flower with pure white sepals and petals and a bluish lip (A.M.), C. T. gloriosa, a good form with very dark lip, C. speciosissima Lowiæ, a wonderful variety with immense flat lip, beautifully veined in the way of Reineckiana, and sepals and petals of a delicate pink (F.C.), C. Schrœderæ grandis, with very large and well-coloured lip, and a very dark Odontoglossum triumphans.

Mr. John Robson, Altrincham, staged a large and excellent group, consisting of good specimen plants of Dendrobiums, and many good forms of Cattleya Mendelii, and amongst which we noticed C. M. aurea, C. M. gigantea, Dendrobium nobile nobilius (A.M.), a good form of Odontoglossum Pescatorei, and a fine O. crispum. A Silver Medal was awarded.

Mr. A. J. Keeling, Bingley, staged a nice group of miscellaneous Orchids for which he was awarded a Vote of Thanks. It included a very fine form of Lælia Jongheana (F.C.), L. × Latona, Dendrobium crassinode album, D. × Edithæ, D. × Cybele, D. × euosmum leucopterum, Cypripedium selligerum majus, an exceptionally fine form (F.C.) C. × Constance (Curtisii × Stonei), and C. Sir Geoge White (Boxallii × Stonei).

Mr. E. Mitchell, Sale, showed Dendrobium nobile nobilius × D. tortile roseum.

The Royal Manchester Botanical Society made the following awards for Orchid groups :—

Mr. Cypher, Large Gold Medal.
W. Thompson, Esq., Gold Medal.
J. Leemann, Esq., Gold Medal.
Messrs. Charlesworth & Co., Gold Medal.
Mr. J. Robson, Gold Medal.
O. O. Wrigley, Esq., Silver Medal.
T. Baxter, Esq., Silver Medal.
E. H. Seddon, Esq., Silver Medal.
Messrs. H. Low & Co., Silver Medal.

At the meeting held on April 26th, there was again a very good display, and the following members of the Committee were present :—Messrs. G. Shorland Ball (in the Chair), Leeman, Parker, Holmes, Cypher, Johnson, and Weathers (hon. sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed a wonderfully grown plant of Angræcum Sanderianum, carrying between eighty and ninety blooms on three spikes, to which a Cultural Certificate was given (see figure on page 145), a fine specimen plant of Dendrobium × melanopthalmum, with five strong, flowering bulbs (A.M.), D. nobile Ballianum (A.M.), and D. × Juno (F.C.).

Thomas Statter, Esq., Stand Hall (gr. Mr. Johnson), showed the beautiful Cattleya intermedia alba, which received a First-class Certificate last year, and which was now shown in robust health (Cult. Cert.), C. Mendelii superba, and Dendrobium Hildebrandii album.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed Lælia purpurata Victoria, with white sepals and petals, and a good coloured lip, but poor in form.

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Odontoglossum crispum Mrs. Thomas Baxter (A.M.), and O. c. augusta (A.M.), both good forms with white ground, blotched with claret-brown, O. × Adrianæ Baxteri (F.C.), and O. × A. Oakfield variety, both very pretty forms, with yellowish ground blotched and spotted with dark red brown. This exhibitor staged a group comprising the above and several other good Odontos, and a very pretty form of Trichopilia suavis, for which a Vote of Thanks was awarded.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), staged a very nice group of Dendrobiums, for which a Vote of Thanks was awarded.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed Odontoglossum × Adrianæ, well grown (Cult. Cert.), O. polyxanthum, Miltonia vexillaria, Oncidium cucullatum, and Masdevallia × Pourbaixii.

J. Leeman, Esq., Heaton Mersey (gr. Mr. Edge), showed Odontoglossum × Ruckerianum illustre, a very fine dark variety (F.C.), O. × Andersonianum, O. luteopurpureum, Lælio-cattleya × elegans Queen Empress (A.M.), and a very effective group, comprising the above, Lælia Digbyana, Cattleya Mendelii, C. Lawrenceana, Lælia purpurata, and many other fine things, for which he received a Silver Medal.

H. Partington, Esq., Glossop, showed Odontoglossum × Adrianæ.

H. Shaw, Esq., Stockport (gr. Mr. Cliffe), showed Lælia × Latona.

E. H. Seddon, Esq., Brooklands, showed Cattleya Schrœderæ and Odontoglossum × Andersonianum.

Mrs. Stanley Clarke, Wrexham, showed Odontoglossum crispum, O. Hallii, and a very good form of Cypripedium Curtisii (A.M.).

Mr. James Cypher, Cheltenham, staged a very effective group, in which we noticed Cypripedium Lawrenceanum, C. ciliolare, C. hirsutissimum, two very well grown plants of C. niveum, Epidendrum radicans, several good Dendrobium nobile, Rodriguezia (Burlingtonia) fragrans, Sophronitis grandiflora, Cattleya citrina, Lælia Boothiana, Diacrium bicornutum, and Cattleya Mendelii. A Silver Medal was awarded.

Messrs. F. Sander & Co., St. Albans, showed Cypripedium × Mrs. Leemann (Rothschildianum × Morganiæ burfordiense) (A.M.), and two very fine varieties of Odontoglossum triumphans, both of which received Awards of Merit.

Messrs. Charlesworth & Co., Bradford, showed Cattleya Trianæ, with a very good labellum, but poor sepals and petals, and Cattleya Schrœderæ Neptune (A.M.).

Mr. A. J. Keeling, Bingley, staged a miscellaneous group, for which he received a Vote of Thanks.

ODONTOGLOSSUM × WENDLANDIANUM CRAWSHAYANUM.

Flowers of this handsome form, which received an Award of Merit from the R.H.S. on April 24th, are sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. The lip is not pandurate, as in the form noted at page 122, being more like the original form in shape. The flower measures nearly three inches across its broadest diameter, and the sepals and petals are very strongly flushed with rose, and densely spotted with chocolate, in this respect resembling heavily marked forms of O. × Ruckerianum. The spine-like crest is a constant feature, which seems to fix O. crinitum as one parent. It would be interesting to know with what it was imported, and settle the point whether O. crispum was the other parent. At present the information seems contradictory.

LÆLIO-CATTLEYA × WRIGLEYI.

THIS pretty little hybrid was raised in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, from Lælia anceps ♀ and Cattleya Bowringiana ♂, and was described at page 359 of our last volume. The accompanying illustration, reproduced from a photograph by Miss Wrigley, will show the curious way in which the characters of the two parents are combined. The vegetative organs are most like those of the Lælia parent, but the

FIG. 24.—LÆLIO-CATTLEYA × WRIGLEYI.

characteristic long scape of the latter has been almost suppressed by the influence of the Cattleya. The flower is fairly intermediate in character, but the nearly entire lip shows the Cattleya influence, as well as the rose-purple colour of the sepals and petals, and their modified shape. The front of the lip is also seen to be very richly coloured, and the basal part light. Other particulars will be found in the original description. It is a most interesting hybrid, and ought to develop into a sterling thing,

for both parents are popular autumn-flowering species of easy culture, and when the plant becomes strong the inflorescence will probably bear several if not many flowers.

ORCHIDS AT CLARE LAWN, EAST SHEEN.

THE well-known collection of Sir Frederick Wigan, Bart., maintains its excellent character, and on looking through the houses the other day we found many beautiful Orchids in flower, and among them noted a few of the more striking.

A fine plant of Dendrobium fimbriatum, the unblotched type, bore fourteen of its beautiful racemes, and close by was a well-flowered example of D. × rhodopterygium, also D. primulinum, and D. Hildebrandii. D. nobile was making a profuse display, and among its varieties nobilius and Cooksonianum were conspicuous. We noted, also, some interesting seedlings derived from D. Hildebrandii × nobile, sown in 1896, which should prove interesting when they flower. A good Cattleya Schrœderæ carried nine spikes, and near by were examples of C. Mendelii, Trianæ, and Aclandiæ, with C. intermedia alba, C. Schilleriana, and C. Skinneri in bud. The pretty little Lælia × Olivia was in bloom, and L. × Latona carried a spike of nine flowers. Nor must we forget the pretty little Epidendrum × Endresio-Wallisii, and the last-named of its parents.

The handsome *Zygopetalum* × Perrenoudi bore a couple of fine spikes, as did also Oncidium sphacelatum, besides which Sobralia macrantha, Phaius × Phœbe, Spathoglottis × aureo-Vieillardii, Cypripedium barbatum, and four plants of C. hirsutissimum carrying an aggregate of nine beautiful flowers, added to the display. The rare Stauropsis gigantea was also in flower.

The Phalænopsis house here is always interesting, and we noted some nice examples of P. Sanderiana, Aphrodite, and Lueddemanniana, two good examples of Eulophiella Elisabethæ, Miltonia Roezlii splendens, and Pescatorea Klabochorum, not quited expanded, all of which do splendidly here. Warm-growing Cypripediums are equally well at home, and we noted in flower C. Mastersianum, Argus, Rothschildianum, and a fine lot of Lawrenceanum and barbatum. C. × Germinyanum, × delicatum, and × politum may be mentioned among the hybrids, and a seedling in bud from C. barbatum × Druryi should settle the parentage of C. × orphanum, were the point any longer doubtful.

The plants of Cymbidium Lowianum in the Rock House have been noted more than once in these pages, and they are again a mass of spikes, which leaves no doubt of the success of the cool treatment adopted. Only a few blooms are yet expanded, but they will present a picture in a few

weeks' time. C. L. concolor is just as promising as the rest in the house.

The Cool houses were gay with about three dozen well-flowered plants of Odontoglossum Rossii, some good O. crispum, nine different forms of O. × Andersonianum, the rare O. Schillerianum, O. gloriosum, O. constrictum Sanderianum, O. Edwardii, examples of the charming little O. Œrstedii, some good Ada aurantiaca, Lælia harpophylla, Cattleya citrina, Sophronitis grandiflora, Leptotes bicolor, Dendrobium Kingianum, Bletia hyacinthina, some showy Masdevallias, the rare M. elephanticeps, and a number of the more botanical species.

Mr. Young has a rich and varied collection under his charge, and his continued success indicates how well he understands the requirements of the various plants.

THE HYBRIDIST.

Dendrodium × Elwesii.

Flowers of a very pretty hybrid have been sent from the collection of H. J. Elwes, Esq., Colesborne, Gloucestershire, with the record that it has been raised there "between D. aureum and D. Hildebrandii." It most resembles the former in shape, having broad, flat petals, without any trace of twisting, as in D. Hildebrandii. They are primrose-coloured, while the lip is deep yellow, with a number of crimson radiating lines on either side near the base. The disc of the lip is velvety, but without the crimson markings found in D. aureum. Thus the flowers distinctly combine the characters of the two parents, and how far this extends to the rest of the plant will perhaps be known hereafter, when it has attained its full development. It is further interesting as the first recorded hybrid from D. Hildebrandii.

Cattleya × Thayeriana.

A figure of a new seedling Cattleya with the above name is given in the *American Florist* for March 24th (vol. xv., p. 1003). It was derived from C. intermedia × C. Schrœderæ alba. Mr. E. O. Orpet remarks:—"The cross was made March 26, 1896, the seed sown April 14, 1897, and the first of the plants is now in bloom. It is a desirable plant, being a great improvement over the seed-parent, C. intermedia. The colour is a delicate pink throughout, the tube of the lip being primrose-yellow with a purple irregular shaped blotch in the centre." It appears to be a very attractive thing, and from its parentage, and the short period which has elaped before it reached the flowering stage, should prove a decided acquisition.

Dendrobium × Staffordi.

This is a pretty little hybrid raised in the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, by Mr. T. Stafford, from D. × Cassiope, crossed with the pollen of D. Bensonæ. It is much like the former in shape,

and has white flowers, with a yellow disc to the lip, and a small maroon blotch near the base. In one of the seedlings the yellow disc is rather large, and the maroon blotch is almost divided into a pair of lateral ones, thus showing the influence of the pollen parent very clearly. It is uncertain at present which is the more typical form. It is a very promising hybrid.

CALENDAR OF OPERATIONS FOR MAY.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

THE figures here given may be said to be the proper summer or growing temperatures, and should be given throughout the summer months.

EAST INDIAN OR WARMEST HOUSE.—This should range by day anywhere between the figures of 75° to 90°, or even higher by sun heat, being guided much by the outside conditions. The night reading should be from 65° to 70°, and it may fall as low as 60° by morning, the early morning temperature being the coldest in their native habitats.

CATTLEYA AND INTERMEDIATE HOUSES.—The inmates of these departments are likewise fond of a considerable amount of heat from now onwards, and these houses may range from 70° to 80°, or higher during sunny, warm weather, with a night temperature of 60° to 65°.

COOL, OR ODONTOGLOSSUM HOUSE.—This structure must now be kept as cool as possible, both night and day, for strong heat is most distasteful to Odontoglossums, and especially is this so if insufficiently ventilated. One cannot avoid the temperature rising in hot weather, inside, as well as out, but he can, by giving air, avoid a close, oppressive atmosphere.

FIRE HEAT.—Very little of this will now be needed, and, indeed, none in the last-named department. For the warmest house, however, it must yet be given at night for some time to come, and also during dull, sunless, or cold days. The intermediate departments will likewise, unless the weather very much alter, still require a little at night for some few weeks, but during the days, unless they be exceptionally cold and cheerless, none should be needed. Fire heat should only be used when really necessary—at other times it becomes an evil, and does more harm than good.

DAMPING-DOWN FOR MOISTURE.—As we are now entering on the growing season proper, when the days are long and the sun powerful, there must be no lack of atmospheric moisture. This is now exactly what is wanted, as everything is bristling with new growths and new rootlets, which must be encouraged by every possible means. Make use of the syringe about the house freely, two or three times at least, in fact, it is now almost impossible to create too much moisture, that is if the ventilators are properly manipulated.

WATERING.—It will scarcely be possible now, generally speaking, to go far wrong in the matter of watering at the root. Much larger supplies are of course necessary than in winter. A pretty safe-guide to follow is to allow the surface compost to assume a whitish appearance, denoting, that the under part is also getting dry, and then to give a good watering with a spouted pot. One can quickly learn if the compost is in a sound and well drained condition by the frequency of waterings required. If it is all right, it is not long before it gets dry, but if the reverse is the case, it presents a dead or soddened appearance and remains a long while before getting dry.

TOP-DRESSING.—I strongly advise where re-potting is not necessary that each plant should be top-dressed with clean, living sphagnum moss. The top layer of old compost should be carefully removed from between the roots, by the aid of a pointed stick, and replaced with a layer of new, sweet material placed on rather lightly. This not only smartens the appearance of the plants very much, but it also loosens the moss so that the air and water can have freer access to the under roots. The new compost laid round the plants seems also to greatly assist growths, the new roots certainly enter it very approvingly. It is scarcely necessary to use peat for top-dressing purposes unless the plants are of large size, when some may be used with the moss. This work of top-dressing and repotting will keep us busy for some time to come, it being the best possible time for so doing. Always remember to well shade a newly-potted plant, and to moisten its surroundings, surface compost, and foliage, with the syringe occasionally, so that an undue loss of foliage or of shrivelling may be avoided. It will then soon become re-established and take the uniform treatment.

COOL-LOVING SPECIES.—Many growers adopt the plan—and a good one—of wintering many of their Orchids in the Intermediate or Cattleya house, and removing them for the summer months to the Cool or Odontoglossum house. Such removals may now take place with propriety, for it is well known that such plants as Cattleyas, Lælias, intermediate-growing Dendrobiums, Schomburgkias, Acinetas, Cœlogynes, Leptotes bicolor, Miltonias, and various members of the Oncidium and Odontoglossum families can withstand and enjoy a large amount of sun heat, when growing, which is not so beneficial to some other genera and individual species generally associated with the intermediate house, such as the Sophronites, Maxillarias, Masdevallias, Lycastes, Oncidiums, Odontoglossums, Cymbidiums, and Anguloas. A few instances may be mentioned where the above system has a happy effect on species which, if left in one house, either cool or warm, the whole year round, are liable to give trouble, Oncidium unguiculatum and tigrinum, O. Phalænopsis, O. Marshallianum, O. hastatum, O. Gardneri, O. Forbesii, O. dasytyle, O. curtum, O. crispum, O. concolor, and O. cheirophorum.

Odontoglossum grande, O. Williamsianum, O. Schleiperianum, O. Reichenheimii, O. Insleayi, O. hastilabium, O. Harryanum, O. cirrhosum, Maxillaria grandiflora, M. venusta, and M. Sanderiana, Masdevallia Reichenbachiana, M. rosea, M, Schlimii, M. Shuttleworthii, M. tovarensis, M. ephippium (Trochilus), M. Chimæra, and allied kinds, M. Houtteana, M. macrura, M. nycterina, and M. psittacina, Lycaste Skinneri, Cymbidium eburneum, C. giganteum, C. Lowianum, C. Tracyanum, Dendrobium infundibulum, D. Jamesianum, and D. Falconeri. I mention this simply as a guide to experiment should any of the foregoing refuse to make reasonable headway. I do not say that it is always absolutely essential to their well-being, as much depends upon the house, and, as I have said previously, it is really surprising what an enormous quantity of different species can be collected together from various parts of the globe and cultivated successfully in one house, if one has some idea of their individual requirements as to shade, warmth, and moisture, and judiciously selects suitable positions for them.

HEAT-LOVING SPECIES.—There are a few kinds which cannot be said to flourish successfully in a mixed collection of intermediate Orchids, and unless one has the extra heat of an East Indian or Stove house at command, it is not wise to attempt to grow them very extensively, because, however cleverly the manipulation of the various plants may be performed in a medium department, it is impossible to provide for them enough heat unless there is too much for the large majority of the remainder. There are for instance, those beautiful Dendrobiums from New Guinea, of which the lovely D. Phalænopsis and varieties are the most useful. These require an abundance of heat and moisture during the summer months, if perfection is attained. Then again that lovely genus, Phalænopsis, wants good heat, as also do some few of the Oncidiums, such as O. Papilio, Krameriaum, Lanceanum, and ampliatum.

THE AMATEUR'S House.—Unless partitioned off, as before advised, the Odontoglossum crispums and allied cool-growing kinds, should be removed to a cool frame. Such a frame may be roughly built for the occasion, and is best if having a northern aspect. It should be of sufficient height to allow the placing in of a stage on which to stand the pots, raising them a few inches so that the air can circulate beneath them. Shade well from the sun, and give plenty of water. Do not place the frame underneath trees, but in the open. A syringing overhead early morning and again at night in hot, dry weather, will do a good deal of good, which, in addition to the watering at the root when dry, will suffice for the requisite damping. Ventilate to the leeward as much as possible, thus preventing arid draughts. Odontoglossum Rossii and O. Cervantesii should certainly occupy this frame. These two species will not require much water for another few

weeks until they start actively to grow. The O. grande section and O. citrosmum are best not removed to the frame.

The House will not now require fire heat, unless it may be a chance cold night or day, when a little might do good. Water all dry plants early in the morning, afterwards syringing overhead with tepid water. About 9 a.m. the nature of the day can mostly be pretty accurately foretold, when what may be considered the necessary amount of air and shade should then be given, which will generally suffice for the day. Sometimes, however, the weather suddenly changes, either for better or worse, and for such emergencies someone at hand should be so instructed as to know exactly what to do under the circumstances. During this month the shutting up, removal of shading, and another overhead syringing with warm water should take place about 4 or 5 p.m., the time depending much on the aspect of the house. It should be closed so that a good warmth is generated, which will last far into the night, but the warmth at the time of closing must not be allowed to become too great. If the nights are very cold, the fire may be lighted from 6 to 7 o'clock, so that the pipes will become warmed later on when solar warmth has evaporated, but, unless the nights are actually frosty, fire should not be wanted now.

VARIOUS NOTES.—Epidendrum vitellinum will grow best in the frame, and is partial to water in summer. Oncidium varicosum continues in the best of health when it roughs it, that is to say, when suspended in a bright, airy position and not much water given—none during the winter. It therefore does best in the house. The majority of the Mexican and Brazilian Oncidiums may be also injured by too much shade and water. To grow them hardy should be the motto. Do not get behind with the repotting. The Lælia anceps, autumnalis, &c., may now be done if necessary. No other Lælias like so much hot sunshine as anceps and majalis. Lælia albida prefers as much shade as Cattleyas, as also does L. autumnalis.

CATTLEYA × CLAESIANA.

With respect to the artificially raised Cattleya × Claesiana described at page 72 of our last volume, Mr. T. L. Mead, of Oviedo, Florida, writes that it has now bloomed three times, and yielded four pods of seed, one from the first bloom in August, 1898, and three from a raceme which appeared nine months later. The present flowers are larger than the earlier ones, being full five inches from tip to tip. Two other plants from the same pod have bloomed, and only show slight differences in the depth of colour. The plants were three and a half, four and a half, and five years old respectively when the first flowers appeared.

ANGRÆCUM SANDERIANUM.

THIS charming little plant is a native of the Comoro Islands, where it was discovered by M. Leon Humblot, and sent to Messrs. F. Sander & Co., of St. Albans. It flowered in 1888, and was described by Reichenbach (*Gard. Chron.*, 1888, iii, p. 168), the author describing it as a near ally of A. descendens, Rchb. f., though distinct in its shorter floral envelopes, rounder petals and lip, and the column without a vestige of hairs. It is still nearer to A. modestum, Hook. f., (*Bot. Mag.*, t. 6693), and may even be a geo-

FIG. 25.—ANGRÆCUM SANDERIANUM.

graphical form of this Madagascar species. Messrs. Veitch who flowered the two contemporaneously in their collection, state that the flowers of both were identical, though the Comoro plant had broader leaves and longer racemes than the Madagascar one (*Man. Orch.*, vii. p. 135.) A. modestum, however, and two or three of its allies are still very imperfectly known, for which reason we have left the names as originally given.

It succeeds admirably in a warm house, under the usual treatment given to the members of this genus, and the annexed illustration shows what it

is capable of. It represents one of two beautiful plants in the collection of G. Shorland Ball, Esq., Ashford, Wilmslow, which the other day we had the pleasure of seeing. It seems almost incredible that so small a plant should be capable of bearing three racemes of 26 and 28 flowers each, yet it is a picture of health and vigour, and its grace and beauty will be universally admitted. For the opportunity of figuring it we are indebted to Mr. Ball's son, who has secured a very successful photograph.

ODONTOGLOSSUM CRISPUM AT HOME.

HERE is another interesting note respecting Odontoglossum crispum in its native habitat, which once more emphasizes the necessity of cool treatment for this lovely species. M. André, alluding to the habitat of this Orchid (*Revue Horticole*, 1888, p. 133), says:—"After we had attained an elevation of 1,623 feet above Pasca, a poor village of the Eastern Cordilleras, nearly 25 miles from Bogota, and at an elevation of about 6,933 feet, the slopes became steeper and steeper, and the 'paramo,' or the cold upper region of the Andes, generally covered in fogs, was visible beneath its veil of mist. The mules were confided to the care of a peon, and our ascent commenced. After two hours' walking through these 'lomas,' or mountainous prairies, covered with short grass, with here and there bushes of Rubus bogotensis, we entered the forest of Orchids. This was quite within the cold region. The arborescent vegetation was meagre and poor, covered with moss, lichens, and Hepaticas, which gave a green appearance to the branches in this region of perpetual damp. There were no flowers, with the exception of the beautiful clusters of white and pale rose of Odontoglossum crispum growing in the forks of the branches, of which plant I took a good supply. Certainly, this species is the Queen of Orchids in the region of Pasca."

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

ORCHIDS were fairly well represented at the Drill Hall, James Street. Westminster, on April 10th, and the quality was excellent, the awards including two First-class Certificates and five Awards of Merit. The members of the Orchid Committee present were: J. Gurney Fowler, Esq., in the chair, and Messrs. H. Ballantine, H. J. Chapman, N. C. Cookson, De B. Crawshay, J. Douglas, J. T. Gabriel, E. Hill, J. Jaques, H. Little, C. J. Lucas, H. T. Pitt, F. Sander, H. A. Tracy, R. B. White, W. H. White, W. H. Young, and J. O'Brien (Hon. Sec.).

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged a very fine group, containing good forms of most of the showy species of the season, and to which a Silver Flora Medal was given. Specially noteworthy

were some good Odontoglossum crispum, some richly-coloured Odontoglossum × Andersonianum Ruckerianum, the rare and very pretty Sarcochilus Berkeleyi, a superb form of Miltonia vexillaria, some good M. Roezlii, M. × Bleuana nobilior, Cypripedium Lawrenceanum Hyeanum, Dendrobium aggregatum, &c. First-class Certificates were given to Zygopetalum (Batemannia) Burtii, Pitt's variety, a fine form of the species, and Cattleya Schrœderæ, Pitt's variety, a particularly dark form, with lilac sepals and petals, and a rose-purple lip, darker in front of the orange throat, and with lavender margin.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), also received a Silver Flora Medal for a superb group, which contained a fine example of Eulophiella Elisabethæ, Phalænopsis Sanderiana, P. amabilis, Epidendrum Stamfordianum, some well-flowered examples of Odontoglossum Rossii, the rare O. Schillerianum, some good O. × Andersonianum, O. gloriosum, Ada aurantiaca, Lælia harpophylla, L. × Olivia, L. × Euterpe, Cattleya Mendelii and Schrœderæ, Miltonia Roezlii alba, M. R. splendens, Cynorchis purpurascens, Trichopilia suavis, the curious Megaclinium falcatum, and some good Cypripediums.

J. Gurney Fowler, Esq., South Woodford (gr. Mr. Davis), received a First-class Certificate for an exceptionally fine form of Cattleya intermedia called Fowler's variety. The plant bore a fine head of white flowers, having a rich crimson-purple lip.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), received an Award of Merit for Odontoglossum luteopurpureum Mossii, with heavily blotched sepals and petals and the ground colour of the lip nearly white. He also exhibited a good Odontoglossum triumphans, and its fine varieties Rex and Raymond Crawshay, O. × mulus Crawshayanum, O. Rossii rubescens, O. × Andersonianum Venus, and O. × Mrs. De B. Crawshay.

J. T. Bennett-Poë, Esq., Holmewood, Cheshunt, received a Cultural Commendation for a well-flowered basket of Lælia harpopyhylla grown in a Cool house.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), showed some good specimens of Dendrobium × Aspasia called D. aureo-Wardianum, D. nobile murrhiniacum, D. × Rolfeæ, D. superbum, and D. s. Huttoni, Lælia Cowani, and Polystachya laxiflora, the latter receiving a Botanical Certificate.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Humphreys) received a Botanical Certificate for Eulophia tristis, a curious little South African species, having a panicle of greenish flowers with a purple lip.

Messrs. James Veitch and Sons, Chelsea, sent several handsome things, including a handsome form of Lælia × Digbyano-purpurata, called var.

fimbriata, the fimbriation being better developed, Dendrobium × Cordelia album, three handsome forms of Dendrobium × Rubens called Socius, all dissimilar, and one of them rivalling D. nobile nobilius in richness of colour, and Cypripedium × Hiero (Lawrenceanum ♀ × Chamberlainianum ♂). The three following each received an Award of Merit :—Lælio-cattleya × Rosalind superba (C. Trianæ ♀ × Lælio-cattleya × Dominiana ♂), Epidendrum × Clarissa (Wallisii ♀ × elegantulum ♂), and a seedling Cypripedium × J. Gurney Fowler (derived from C. barbatum Warneri ♀ × C. Godefroyæ ♂).

Messrs. Hugh Low and Co., Bush Hill Park, Enfield, sent Phalænopsis × Lady Rothschild (P. Sanderiana × intermedia Brymeriana), a beautiful hybrid, to which an Award of Merit was given. It has white flowers, with a rosy tinge and some lines of minute dots about the centre of the segments, the crest of the lip yellow, and the front lobe reddish rose.

Mr. A. Fisher, Farnham Road, Tottenham, showed a seedling Cypripedium derived from C. insigne albo-marginatum × concolor, and thus a form of C. × Orion.

Messrs. F. Sander & Co., St. Albans, sent a pretty group, containing some good Odontoglossums, one being a very handsome form of O. × Adrianæ, a fine Cattleya × calummata, some good Dendrobium Phalænopsis, D. lituiflorum, Cypripedium × Merops (ciliolare × Druryi), and other good things.

Mr. H. A. Tracy, Twickenham, showed the handsome Miltonia Roezlii, and a good Dendrobium atroviolaceum.

The exhibits were more numerous at the meeting held on April 24th, but the groups were not staged together, as usual, but scattered about the Drill Hall, owing, it is said, to the crowded state of the tables.

The members of the Orchid Committee present were :—H. Little, Esq., in the Chair, T. W. Bond, H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, E. Hill, J. Jaques, H. T. Pitt, J. W. Potter, T. Rochford, F. J. Thorne, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (Hon. Sec.)

Sir F. Wigan, Bart. (gr. Mr. Young), staged a choice group, to which a Silver Flora Medal was given. It included some good forms of Cattleya intermedia, including the chaste var. alba, a fine C. Mendelii, C. × porphyrophlebia, C. Schilleriana, C. × Wm. Murray, Lælia Jongheana, L. × Latona with nine flowers on the spike, a good Lælio-cattleya × highburyensis, some good Odontoglossum Rossii, &c.

H. T. Pitt, Esq. (gr., Mr. Thurgood), also received a Silver Flora Medal for an excellent group, containing Cattleya Schrœderæ, C. S. alba, C. Lawrenceana with fifteen flowers, C. × Wm. Murray, and other good Cattleyas, a fine Lælio-cattleya × Schilleriana, Sophronitis grandiflora,

Phaius × Cooksoni, Cochlioda Nœtzliana, the handsome Odontoglossum × Wilckeanum Pitt's var., some good P. × Andersonianum, Miltonia vexillaria, M. Roezlii, and some good Cypripediums. A First-class Certificate was given to Cattleya Schilleriana Pitt's var., a very fine dark form.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), also received a Silver Flora Medal for a very fine group, including Rodriguezia fragrans, Lælia harpophylla, Cattleya Lawrenceana, and others, and a fine lot of Dendrobiums, including D. dixanthum and D. revolutum, and some finely grown and profusely flowered D. nobile and D. Wardianum. D. W., Fir Grange var., received an Award of Merit.

W. Thompson, Esq., Walton Grange, Stone (gr., Mr. Stevens), received First-class Certificates for Odontoglossum crispum The Earl, with very large red-brown blotches on the sepals, and O. c. Victoria-Regina, very strongly suffused with rose-purple and bearing darker blotches near the centre.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. Murray), received a First-class Certificate for Odontoglossum × Andersonianum Cooksoni, a particularly large, evenly blotched form, which was further interesting as one of Mr. Cookson's first two Odontos, which had, previously, been some years in his uncle's collection.

Sir Trevor Lawsence, Bart. (gr. Mr. White), showed a good Cattleya Schrœderæ with nine flowers, and a fine Dendrobium teretifolium with sixteen spikes, also D. macrostachyum, and Cirrhopetalum fimbriatum with a dozen umbels, the two latter each receiving a Botanical Certificate.

De B. Crawshay, Esq. (gr. Mr. Cooke), showed some fine forms of Odontoglossums crispum, O. c. Bonnyanum being very striking. O × Wendlandianum Crawshayanum is a richly-coloured form which received an Award of Merit.

Walter Cobb, Esq., Tunbridge Wells (gr. Mr. Howes), sent Odontoglossum nævium, two good forms of O. triumphans, and Cattleya Schrœderæ.

J. Colman, Esq., Gatton Park (gr. Mr. Bound), sent a good form of Odontoglossum × Andersonianum.

H. Little, Esq., Twickenham (gr. Mr. Howard), sent a pretty Lælia purpurata having white flowers with a light flush of rose on the lip.

Sir James Miller, Bart., Manderston, Dunn, N.B. (gr. Mr. Hamilton), sent Lælio-cattleya × Lady Miller (L. cinnabarina × C. granulosa Schofieldiana) a pretty copper-yellow flower, with some crimson veining on the lip, which the Committee desired to see again.

R. Brooman-White, Esq., Arddarroch, N.B., showed flowers of Cattleya Schrœderæ.

W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robbins),

showed a pretty seedling derived from C. bellatulum and C. barbatum Warneri.

M. Florent Claes, Brussels, showed the pretty little Physurus Ortgiesii (whose history is given at p. 296 of our last volume.)

Messrs. James Veitch and Sons, Chelsea, sent Lælio-cattleya × Wellsiana, Cypripedium × Jocasta (insigne Chantini ♀ × Haynaldianum) and some good Dendrobiums.

Messrs. Hugh Low and Co., Bush Hill Park, staged a very pretty group, to which a Silver Banksian Medal was given. It contained some good Cattleyas and Odontoglossums, together with Epidendrum alatum, a fine Oncidium Papilio, Cypripedium conco-bellatulum, &c.

Messrs. F. Sander and Co., St. Albans, sent a group of showy Cattleyas, including C. citrina with six flowers, Masdevallia Schrœderiana, Oncidium Marshallianum, Dendrobium Phalænopsis, a strong plant of the remarkable Bulbophyllum barbigerum, &c.

Mr. H. A. Tracy (Twickenham) showed Cattleya Schrœderæ regalis, a fine form having a bright purple blotch in the centre of the lip.

NOTES.

The next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on May 8th, when the Orchid Committee will meet at the usual hour, twelve o'clock, noon.

At three p.m., a lecture will be given by W. Bateson, Esq., M.A., F.R.S., entitled, "Is there any Natural limit to the Improvement of Cultivated Plants?" The subject is of considerable interest to Orchidists.

The Society's Great Annual Show will be held as usual in the Inner Temple Gardens, Thames Embankment, on May 23rd, 24th, and 25th. The Orchid Committee will meet at eleven a.m. Exhibitors must make their entries upon a regulation form which may be obtained upon application. Silver Cups and Medals will be awarded according to merit.

The next meeting of the Manchester and North of England Orchid Society will be held on May 10th, when the Orchid Committee will meet at 12, noon. The Annual Meeting of the Society will be held in the afternoon of the same day.

An exceptionally fine form of Odontoglossum × Adrianæ, called var. Argus, is sent from the establishment L'Horticulture Coloniale, Brussels, by M. L. Linden. The inflorescence is compact, and bears large flowers of excellent shape, which are beautifully tinted with rose and heavily spotted. It is a most charming form.

A fine group of white forms of Lælia anceps in Mr. J. Cypher's nursery, at Cheltenham, is figured in *The Garden* for March 31st (page 241).

The March issue of the *Dictionnaire Iconographique des Orchidées* contains figures of Aëranthus grandiflorus, Cattleya Bowringiana, C. × Bowringiano-labiata, Cypripedium Chamberlainianum, C. × aureum var. Œdipe, Lælia Perrinii and vars. irrorata and alba, L. × leucoptera, Lælio-cattleya × elegans var. blenheimensis, Masdevallia tovarensis, Miltonia Regnellii and var. citrina, and M. × Cogniauxiæ. The latter is an interesting and beautiful natural hybrid derived from M. spectablis Moreliana and M. Regnellii.

A beautiful photograph is sent by O. O. Wrigley, Esq., Bridge Hall, Bury, showing three plants of Dendrobium Wardianum, selected from a group shown at a recent meeting of the Manchester Orchid Society. The centre plant is a very compact and handsome one, bearing about 172 flowers on nine growths. A growth on another plant measures 39 inches long, and bears 37 flowers. They are not newly imported plants, but have been in the collection two seasons (see notes at pages 69 and 127).

Mr. T. L. Mead, of Florida, has a seedling Dendrobium × Niobe just about to open, apparently a good dark form. The parents were a dark D. nobile and D. tortile roseum, and the seed was sown in 1895. Some interesting notes respecting Mr. Mead's seedlings have previously appeared in our pages.

Since Lycaste × Janetæ (Skinneri ♀ × Rossiana ♂) was described, from the collection of H. J. Ross, Esq., of Florence (ante, vii., p. 360), three other seedlings from the same capsule have flowered, one of which is now sent, and approaches much nearer to L. Skinneri, the sepals and petals being dotted all over with rose, while the lip is yellow with dark crimson markings at the base, and a few hairs. In fact it is fairly intermediate. A second is nearer the original, and a third has still more of the Rossiana character.

A superb form of Dendrobium Wardianum from the collection of F. M. Burton, Esq., Highfield, Gainsborough, measures over five inches in diameter across the petals, and the lip is over $1\frac{1}{2}$ inches broad and rather flat. Curiously enough, it has three perfect anthers, side by side, each containing perfect pollinia, the additional pair being transformed column wings. A fine form of Odontoglossum luteopurpureum is also sent.

A very fine form of Dendrobium Wardianum is sent from the collection of Frau Ida Brandt, of Zurich, which measures nearly five inches across its broadest diameter, and the petals are $1\frac{3}{8}$ inches broad.

A seedling Paphiopedilum, sent from the collection of H. J. Ross, Esq., of Florence, much resembles P. × orphanum, but from its very long scape it is thought P. Lawrenceanum and P. Druryi were the parents. The point may be cleared up hereafter.

An exceptionally fine specimen of Epidendrum Medusæ, in the collection of J. Buchanan, Esq., Oswald House, Edinburgh, is mentioned in a recent number of the *Gardeners' Magazine* (p. 132). It is in a basket two feet square, and hangs in a cool house, near a ventilator that is almost always open, even in frosty weather. Two other plants are only slightly smaller.

An exceptionally fine and richly coloured form of Cattleya Trianæ, with a feathered blotch at the apex of the petals, is sent from the establishment of Messrs. Hugh Low & Co., Bush Hill Park. It is now in the collection of J. Bradshaw, Esq., of Southgate. Another very charming variety, called Empress of India, is also sent, having pure white sepals and petals of excellent shape, and the front of the lip of a beautiful purple shade.

A seedling Paphiopedilum derived from P. × nitens × venustum is sent from the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, by Mr. Archer. It is fairly intermediate in character, and approaches P. × Crossianum in general character.

A spike of the beautiful Diacrium bicornutum is also enclosed, one of twelve now borne by the plant.

A very distinct variety of Phaius Wallichii is sent from the collection of J. S. Womack, Esq., Taplow Grange, Bucks, in which the sepals and petals are light yellow in colour, and the front of the lip still paler. It may be called P. W. flavescens. The spike bore nine flowers.

A plant of the pretty little Odontoglossum × stauroides, Rchb. f., has flowered in the collection of J. Wilson Potter, Esq., of Croydon, out of a batch of imported O. Pescatorei. O. Lindleyanum is the other parent, and its history may be found at page 141 of our second volume.

ORCHID PORTRAITS.

Angræcum Leonis.—*Journ. Hort.*, 1900, xl. pp. 301, 303, fig. 84.
Angræcum modestum.—*Journ. Hort.*, 1900, xl, pp. 261, 263, fig. 71
Cattleya Trianæ majestica.—*Lindenia*, t. 689.
Cypripedium bellatulum album.—*Journ. Hort.*, 1900, xl. p. 345, fig. 97.
Dendrobium bigibbum, Lindl.—*Gartenflora*, xlix, p. 169, t. 1478.

DENDROBIUM × CLIO SUPERBUM.—*Garden*, 1900, lvii, p. 268, with fig.

DENDROBIUM × MELPOMENE.—*Journ. Hort.*, 1900, xl. p. 281, fig. 76; *Gard. Mag.*, 1900, p. 206, with fig.; *Garden*, 1900, lvii. p. 28, with fig.

DENDROBIUM NOBILE ALBUM.—*Journ. Hort.*, 1900, xl. p. 281, fig. 77; *Garden*, 1900, lvii, p. 268, with fig.

DENDROBIUM × VIRGIL.—*Gard. Mag.*, 1900, p. 235, with fig.

LÆLIA × EDISSA.—*Gard. Mag.*, 1900, pp. 193, 195, with fig.

LÆLIA JONGHEANA TEMPLE'S VAR.—*Gard. Mag.*, 1900, p. 220, with fig.

LÆLIO-CATTLEYA × CALLISTOGLOSSA SPLENDENS.—*Garden*, 1900, lvii. p. 231, with fig.

ODONTOGLOSSUM CRISPUM VAR. OAKFIELD SUNRISE.—*Gard. Mag.*, 1900, p. 248, with fig. VAR. PAPILLON.—*Lindenia*, t. 692.

ODONTOGLOSSUM × ELEGANS EASTWOOD PARK VAR.—*Journ. Hort.*, 1900, p. 261, fig. 70; *Gard. Mag.*, 1900, pp. 234, 235, with fig.

ODONTOGLOSSUM LUTEOPURPUREUM MOSSII.—*Journ. Hort.*, 1900, xl. p. 345, fig. 96.

ODONTOGLOSSUM × RUCKERIANUM SPLENDENS.—*Journ. Hort.*, 1900, xl, pp. 281, 283, fig. 78.

ODONTOGLOSSUM TRIUMPHANS VAR. LIONEL CRAWSHAY.—*Journ. Hort.*, 1900, xl, p. 301, fig. 82. VAR. RAYMOND CRAWSHAY.—*l.c.* fig. 83.

RENANTHERA IMSCHOOTIANA, Rolfe.—*Bot. Mag.*, t. 7711.

RHYNCHOSTYLIS RETUSA, Blume.—*Lindenia*, t. 691.

VANDA AMESIANA, Rchb. f.—*Lindenia*, t. 690.

ZYGOPETALUM (BATEMANNIA) BURTII.—*Garden*, 1900, lvii, p. 309, with fig.

CORRESPONDENCE, &c.

(*Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily*).

E. F. C., Teignmouth. Lælio-cattleya × highburyensis, but an exceptionally fine form. The Cattleya Trianæ is very small, but may improve when stronger. Lælia crispa grows far away in S. Brazil. If you look at the figures at page 81, you will see that your flower is Paphiopedilum insigne Sanderianum, and can never have been any part of P. i. Sanderæ.

H. J. H., Edinburgh. The seedling is probably from Masdevallia Veitchiana × Chelsoni, for the other crosses should give a different result. The point may be cleared up hereafter.

G. B., Hamburg. A good, typical form of Cattleya intermedia.

W. A. E., Leicester. Oncidium Marshallianum.

W. V., Chislehurst. A good form of Paphiopedilum × Richmanii, which is confirmed by the parentage given.

W. Y., Croydon. Odontoglossum × stauroides, Rchb. f.

We have received a descriptive Catalogue of Orchids from Messrs. Charlesworth & Co., Heaton, Bradford, containing a selection of all the leading varieties, as well as a numerous series of unflowered seedlings which are offered for sale.

Photographs received with thanks. O. O. W., G. S. B., A. W. H.

ERRATUM.

"Odontoglossum crispum Imperator," mentioned on page 128, should be "O. c. Imperatrix," as we learn from Mr. Crawshay, the possessor of the plant.

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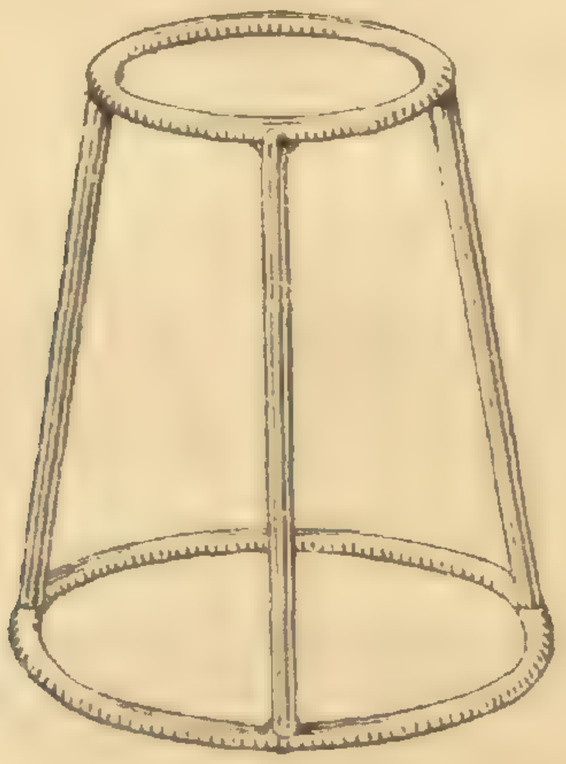

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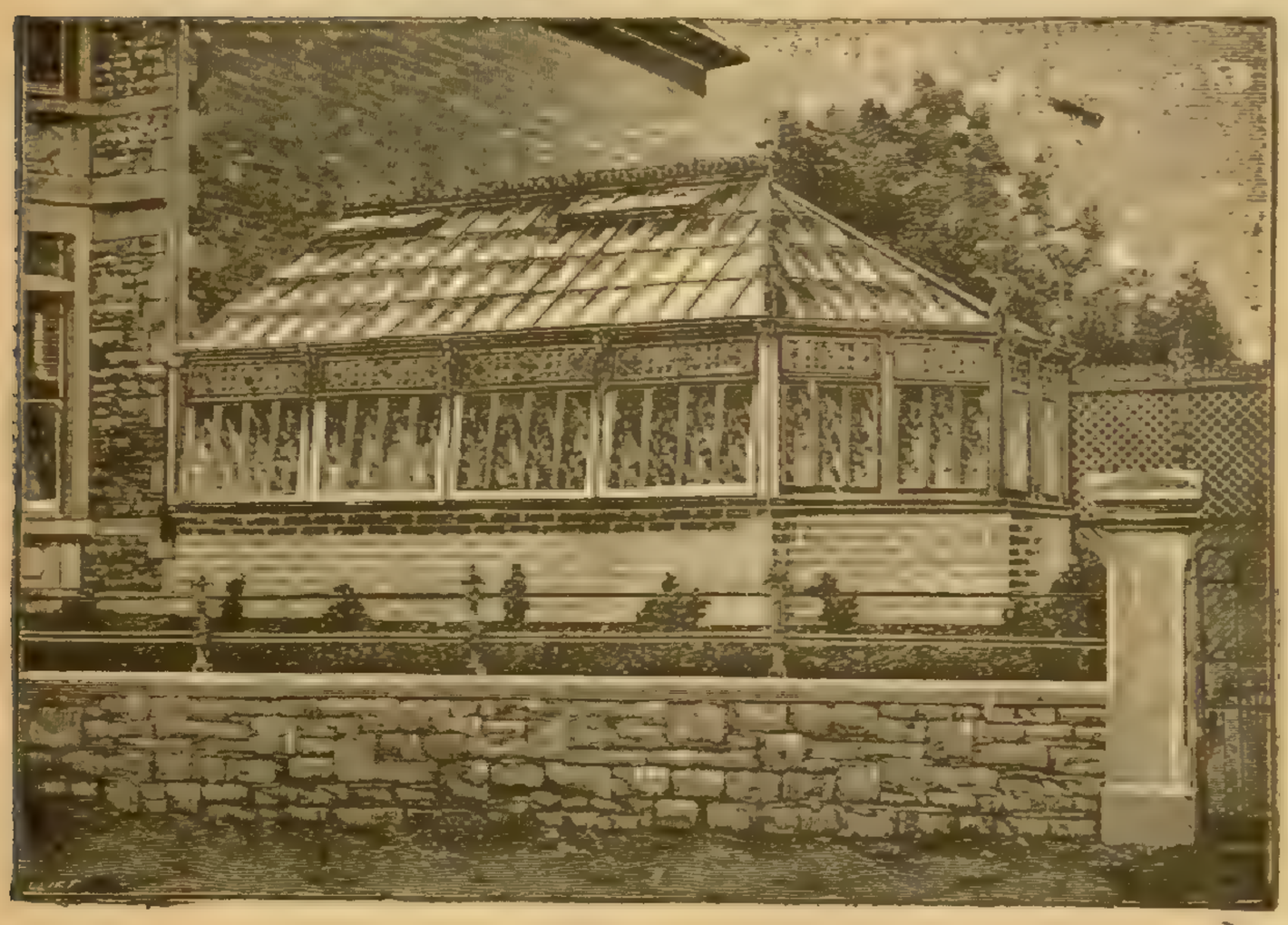

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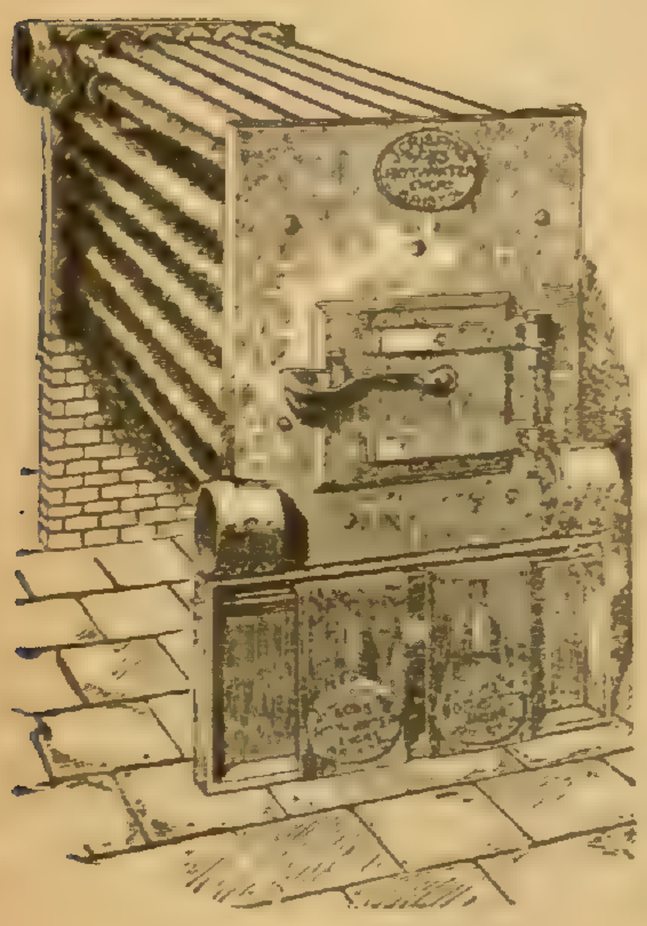

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. VIII.] *JUNE*, 1900. [No. 90.

HYBRID DENDROBIUMS.

HYBRID DENDROBIUMS are becoming very numerous, and during the present season we have examined quite a series of them from various sources. This addition to the ranks of our most beautiful spring-flowering Orchids is a cause for congratulation, but at the same time it introduces difficulties under the heading of nomenclature, and causes some embarrassment to those who desire to keep an intelligible record of what is being done in this department. We have several times been asked to suggest suitable names for such and such hybrid, to call it after the raiser, or to apply some other appellation; in a few cases with the sensible proviso, "if it has not already been named." To comply with this request is often no easy matter, and for several reasons. In the first place, we have not yet any uniform system of recording what has already been done, and in the second, the materials accumulate so rapidly and so continuously that lists quickly become out of date, and it is almost impossible to keep up with the records. Of these causes, however, want of system is undoubtedly the greater evil, if not the most difficult to remedy, and a few suggestions on the matter generally may not be out of place.

We have a rule, which has met with pretty general acceptance, that all hybrids between the same two species shall be considered as forms of one, a varietal name being added whenever necessary. But it is not always strictly followed, for the hybrid between D. nobile and D. aureum, one of the earliest and best known in the genus, has received several distinct names, though, strictly speaking, all are forms of the original D. × Ainsworthii.

The same principle is applicable to the treatment of secondary hybrids, and has sometimes been followed, though frequently they are treated as florists' flowers, and named without reference to their origin. A good example of the latter method is furnished by the hybrid between D. ×

Ainsworthii and D. Findlayanum, which was originally raised in the collection of Sir Trevor Lawrence. The two first seedlings which flowered differed remarkably between themselves, and were described by Reichenbach as D. × chrysodiscus and D. × melanodiscus. Afterwards several others flowered out of the same batch, and also received separate names, as D. × Hebe, × Luna, × Dido, × Rainbow, and × The Pearl, all of which Hansen treats as synonyms. But the same cross has since been raised in otner collections, and the seedlings have also received distinct names. Other examples might be cited, and it suggests the question, What will our system of nomenclature be like when secondary hybrids become more numerous, and all are named on the same principle ?

It would seem far more logical to have one uniform rule for the treatment of both primary and secondary hybrids, and from almost every point of view it would simplify matters to treat all hybrids between any two parents as forms of one, varietal names being added when necessary for the identification of distinct variations. In other words, hybrids should be classified with regard to their origin, rather than their appearance, which would help us to realize the amount of variation shown by different hybrids, and keep the number of names within reasonable limits. Unless this principle is adopted, a great amount of confusion in nomenclature is inevitable, for we have already several hybrids with distinct names which are not even distinguishable as varieties.

By way of showing how this system would work out in practice, we have arranged the existing hybrids of the genus on the following plan. Primary and secondary hybrids are kept in separate lists, and the parents are arranged alphabetically under the first of the two parents in the alphabetical series. Thus the hybrids between D. aureum and D. nobile are arranged under the former. This is done to avoid duplication of each entry, which would otherwise be necessary. In consulting the list one has only to remember this arrangement in order to find the name of any given hybrid. Natural hybrids, however, unless also raised artificially, are not included, and no attempt is made to indicate which was the seed parent. The names within brackets in the Hybrid column are synonyms, and those which are distinct enough may rank as varieties.

PRIMARY HYBRIDS.

PARENTS.		HYBRIDS.
albosanguineum	nobile	× Murrayi.
aureum	Falconeri	× Benita.
,,	Findlayanum	× Schneiderianum (*See* p. 169).
,,	Hildebrandii	× Elwesii.
,,	Linawianum	× dulce (× burfordiense).
,,	luteolum	× cheltenhamense.

aureum	moniliforme	× endocharis.
,,	nobile	× Ainsworthii (× Leechianum, × splendidissimum, × Edithæ, × Armstrongii, × Sanderæ).
,,	superbum	× Gemma.
,,	Wardianum	× Aspasia (× Wardiano-aureum, × Ellerianum).
Bensonæ	moniliforme	× Virginia.
bigibbum	Linawianum	× Sibyl.
chrysotoxum	pulchellum	× illustre.
crassinode	luteolum	× Astræa.
,,	Wardianum	× Waltoni (× melanophthalmum, × crassinodi-Wardianum — *See*
crepidatum	nobile	× crepidato-nobile. [p. 177).
crystallinum	moniliforme	× Æneas.
Falconeri	moniliforme	× Vannerianum.
,,	nobile	× Venus.
Findlayanum	Linawianum	× Harold.
,,	nobile	× Cybele.
,,	Wardianum	× Findlayano-Wardianum.
formosum	Lowii	× formoso-Lowii.
Huttoni	pulchellum	× porphyrogastrum.
,,	sanguinolentum	× rhodostoma.
Kingianum	speciosum	× Kingiano-speciosum.
Linawianum	nobile	× Dominyanum.
,,	Wardianum	× chlorostele (× Juno, × Owenianum, × xanthocentrum).
lituiflorum	nobile	× Corningianum.
,,	Wardianum	× micans (× Alcippe, × Euryclea).
luteolum	Wardianum	× Bryan.
moniliforme	pulchellum	× Stratius (× striatum).
,,	nobile	× Cassiope.
,,	Wardianum	× Wardiano-japonicum.
nobile	primulinum	× Rolfeæ.
,,	Ruckeri	× Roeblingianum.
,,	signatum	× Wiganiæ.
,,	thyrsiflorum	× Backhousei.
,,	tortile	× Niobe.
,,	Wardianum	× murrhiniacum (× Euterpe).
,,	superbum	× Nestor.
Parishii	,,	× Adrastus.
Pierardi	,,	× Mentor.
primulinum		

SECONDARY HYBRIDS.

× Ainsworthii	aureum	× The Gem.
,,	× Cassiope	× Andromeda.
,,	Findlayanum	× melanodiscus (× chrysodiscus, × Hebe, × Luna, × Dido, × Rainbow, × pallens, × Pearl, × Clytie, × hesslense).
,,	moniliforme	× Doris.
,,	nobile	× Rubens (× Apollo, × dellense, × Euryalus, × Thalia, × dellense, × Virgil, × whitefieldense).
,,	signatum	× Melpomene.
,,	Wardianum	× Lutwycheanum (× Clio).
aureum	× euosmum	× Cordelia.
× Bensonæ	× Cassiope	× Staffordi.
× Cassiope	aureum	× Curtisii.
,,	Wardianum	× Berkeleyi.
× cheltenhamense	nobile	× Thompsonianum.
× chlorostele var. Juno	Wardianum	× Vulcan.
× Dominyanum	Findlayanum	× Burberryanum.
,,	×Schneiderianum	× Holmesianum.
× endocharis	nobile	× euosmum.
× euosmum	signatum	× Imogen.
moniliforme	× Rolfeæ roseum	× Galatea (× Ethel).

It is probable that this list is not quite complete, even so far as published names are concerned, and we should be glad to know of any omissions. In the hybrid column the earliest name is placed first, except that D. × Aspasia is adopted instead of the provisional name D. × Wardiano-aureum, D. × Stratius instead of D. × striatum, which, we have been informed, arose through a misprint or mis-copying the label, and D. × melanodiscus instead of D. × chrysodiscus, as the more typical form. The latter alteration is trivial, for both were described together on the same page; and we may add that the spelling melanodiscum, &c., sometimes adopted, besides being an innovation, is grammatically incorrect. No attempt is made to indicate varieties; the names bracketed together as derived from the same parentage being those which have received distinct specific names. The majority are distinct as varieties, but a few are scarcely more than synonyms. We hope to see this principle carried out more fully in the nomenclature of future additions to the list.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of this Society was held at the Coal Exchange, Manchester, on May 10th, 1900, when there was again a very fine display of Orchids.

The Members of the Committee present were:—Messrs. G. Shorland Ball (in the chair), Leemann, Thompson, Duckworth, Lovell, Warburton, Parker, Bolton, Cypher, Robson, Upjohn, Stevens, Holmes, and Weathers (Hon. Sec.)

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed a very fine specimen of the beautiful and curious Cœlogyne pandurata (F.C. and Cult. Cert.), a well-grown plant of Oncidium concolor, two very pretty forms of Odontoglossum crispum, nearly white, to one of which an Award of Merit was given, and Dendrobium densiflorum Schrœderi.

John Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a wonderful lot of Odontoglossums, and a fine selection of mixed Orchids, for which he received a Gold Medal. The following were noticeable as being of special merit:—Odontoglossum crispum Magister, a very heavily spotted form (A.M.), O. c. Rodigasianum (A.M.), O. crispum Mont Blanc (A.M.), O.c. mirabile (A.M.), O. Pescatorei grande, O. P. Empress Frederick (A.M.), O. triumphans, O. × Andersonianum decorum, O. × A. Canarie (A.M.), O. × Ruckerianum elegans (A.M.), O. × Adrianæ spectabile (A. M.), O. × A. picturatum, O. × A. delicatum, Cattleya Mendelii illustre (A.M.), and Lælio-cattleya × Marie Speransky (purpurata × Skinneri).

W. Thompson, Esq., Walton Grange (gr. Mr. Stevens), staged an effective group, for which he received a Vote of Thanks, and Odontoglossum × cirro-Hallii, a very pretty hybrid, quite intermediate in character (A.M).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Odontoglossum crispum Thomas Baxter (A.M.), O. × Adrianæ morecambiense (A.M.), O. × A. Little Gem, and a small group for which he was awarded a Vote of Thanks.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), showed the beautiful Cypripedium Lawrenceanum Hyeanum (F.C.).

Samuel Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Cypripedium Lawrenceanum Gratrixianum, very much in the way of Hyeanum, but with the radiations on the outsides of the dorsal sepal and the lower part of the lip tinged with red (A.M.), C. × palawanense, Odontoglossum × Wilckeanum (A.M.), Cattleya Lawrenceana, and Lælio-cattleya × Ascania (A.M.).

Richard Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed Dendrobium nobile Amesiæ (A.M.), D. n. Richard Ashworth, a new

variety, something in the way of Ballianum, but with longer petals and sepals, and the labellum more closed (A.M.), two good forms of Odontoglossum crispum, a good form of O. Pescatorei (A.M.), and a very good variety of O. × Andersonianum (A.M.). This exhibitor also staged a small miscellaneous group, for which he was awarded a Vote of Thanks.

W. Watson, Esq., Stretford (gr. Mr. Jones), showed Odontoglossum crispum and Cattleya Mendelii.

A. Lees, Esq., Stretford (gr. Mr. Jones), showed Lælio-cattleya × highburyensis.

Mr. James Cypher, Cheltenham, showed Cattleya Mendelii, a very pretty light form; Cypripedium niveum giganteum, a very large-flowered variety (A.M.), and Lælia præstans The Gem, a flower of excellent colour and form but small in size. This exhibitor also staged a group of miscellaneous Orchids for which he was awarded a Vote of Thanks.

Mr. John Robson, Altrincham, staged a very effective group, which received a Silver Medal, and amongst which two very fine Cattleya Mendelii, which each received an Award of Merit, and a Cattleya Mossiæ were of great merit.

Messrs. Linden, Brussels, showed a large and very dark form of Miltonia vexillaria named memoria Lindenii (A.M.).

Messrs. Heath & Son, Cheltenham, showed Dendrobium barbatulum and a very fine variety of Phalænopsis amabilis.

Mr. W. Bolton, Warrington (gr. Mr. Cain), staged a group of very fine Cattleya Mendelii, for which he was awarded a Vote of Thanks.

Annual General Meeting.

The Annual General Meeting was held at two o'clock, when the chair was taken by G. Shorland Ball, Esq., a large number of members being present. The Honorary Treasurer, Dr. E. J. Sidebotham, having presented his balance sheet, which showed a balance of £69 to the credit of the Society after paying all liabilities, Mr. P. Weathers, Honorary Secretary, announced that the three following members had gained the three medals to be awarded for the highest number of points obtained during the past year.

Gold Medal, J. Leemann, Esq.

Silver-gilt Medal, W. Thompson, Esq.

Silver Medal, T. Baxter, Esq.

The Chairman then addressed the meeting, and congratulated the Society upon its increased prosperity and sound financial condition.

The following were then elected members of the Committee for the ensuing year :—

Messrs. G. Shorland Ball, W. Thompson, J. Leemann, G. W. Law-Schofield, S. Gratrix, A. Warburton, Dr. Hodgkinson, E. J. Sidebotham,

C. Parker, W. Bolton, D. B. Rappart, W. Duckworth, J. Cypher, J. Robson, W. Holmes, R. Johnson, W. Stevens, A. Upjohn, R. Ashworth, T. Baxter, and H. Worthington.

Mr. P. Weathers was appointed Hon. Secretary for the year; and it was decided that the Chairman for the time being of the Committee should in future act as Hon. Treasurer.

At a subsequent meeting of the Committee, after the appointment of G. Shorland Ball, Esq., Chairman, and John Leeman, Esq., Vice-Chairman, the following dates were fixed for the meetings for the ensuing year :—

June 7 and 21, July 19, September 6 and 27, October 12 and 25, November 8 and 22, December 13, January, 1901, 10 and 24, February 7 and 21, March 7 and 21, and April 4 and 18.

CONSTRUCTION OF ORCHID HOUSES.

It is notorious that private growers of Orchids are, with some notable exceptions, a good way behind the nurseryman in cultural attainments, yet the former are not lacking in enthusiasm, intelligence, or perseverence. The cause of non-success, or only partial success, in the culture of Orchids is in numerous instances more attributable to the unsuitability of the houses than to mismanagement on the part of the grower.

In the bigger nurseries the houses run parallel, opening at both ends into corridors, hence in-rushes of cold air are avoided when the doors are opened. As a rule, the houses are slightly sunk, and the roofs rest directly on brick work; thus, cold glass side-lights are dispensed with. The passages between the houses are just wide enough for working purposes—airing and shading—so that the one house acts as a shelter for the other. The internal structure has been built with forethought and experience, and the piping is fully adequate for all emergencies.

How differently equipped are the majority of private gardeners! Houses isolated; deep side-lights and exposed glass ends; faulty internal structure, and inadequate piping.

A house built as above can never be made to do Orchids justice in winter, no matter whether in cool or warm-house. Fire-heat is the ruin of Odontoglossoms and—I will go a step further—fire-heat out of reason will ruin any Orchid under the Sun.

The ideal Orchid house is the one in which the required temperature can be maintained without having undue resource to fire-heat, and anything that tends to further this object is of inestimable value. Further, as fire-heat must in all cases be sometimes resorted to, our aim should be to provide it in as mellow a form as possible. The nearest approach to the

ideal house is, in my opinion, the nurseryman's, viz., no glass side-lights, and the ends protected.

In small private collections, where the houses are of diverse shapes and sizes, the corridor, as an end protection, will be impracticable, but in all cases glass sides can be abolished, and as a substitute for the corridor, at least one end—the end with the colder aspect—built of brick. My experience of glass side-lights is that they keep the house cold out of all proportion to their size. Although double glass side-lights are but little met with in England, in the good private places on the Continent they are pretty common; I have more particularly in mind "Villa Rothschild," Vienna, where double glass sides are the rule. I might suggest double glass for the sides and ends as an intermediate course between single glass and brick.

There should be not only enough piping in a house, but more than enough. Where three rows of pipes must be kept at boiling point to maintain the temperature, let there be five or six rows genially warm, and the house will be healthier.

Air, light, and heat are essential to Orchids, as to other plants, and a great part of the secret of the successful Orchid grower is in blending and balancing these three to the best advantage. One must be sacrificed at the expense of the other; yet I maintain that by having side-lights on Orchid houses, heat is being sacrificed for light. In summer, when light is abundant, we could do very well without them on the plea of light. When the cold, dull days of winter come, they must perforce be covered up with mats, &c., and then, at a time when all the light available is valuable—were no such thing as heat required—our side-lights are useless and belie their name. But side-lights are not generally meant by the designer for utility, but because they give the house a nicer appearance. Yet, surely here again their object is defeated, for a house hanging in tatters half the year is not a thing of beauty. I need not say that no amount of covering up equals a brick wall. The mats become sodden and act as refrigerators all round the house.

The injurious effects of fire-heat during the winter cannot be over-stated, The more fire-heat, the more damping is required, and no amount of care can keep a slim, openly constructed, exposed house at the required temperature and hygrometrically healthy. A fierce heat from the pipes is not only directly detrimental to the plants, but causes such pests as red-spider and thrip to flourish.

Every Orchid house should have two stages: one a foot or more above the pipes, to hold coke or sand, and the staging proper, eight inches or a foot above the lower. The coke or sand in the lower staging or trough should be of a depth of at least four inches. If too shallow, the moisture is rapidly evaporated, necessitating more frequent damping than is advisable—

the moisture-holding material should be of such a body as not to be too readily influenced by the hot-water pipes. The top staging should be far enough away from the lower one to admit of the free circulation of air between the two. When too close together, the air remains more or less stagnant, there being no upward current through the plants.

A good body of coke under the pipes, and blue, corrugated, Staffordshire bricks for a pathway make excellent flooring.

Streatham. J. M. BLACK.

DENDROBIUM × SCHNEIDERIANUM.

IT is very interesting to be able to compare a hybrid with its two parents, and to see the way the different characters are combined. For this reason we now reproduce a photograph taken by Mr. Eric Ball, of Ashford, Wilmslow, showing the charming hybrid Dendrobium × Schneiderianum,

FIG. 26. D. × SCHNEIDERIANUM.
FIG. 27. D. FINDLAYANUM. FIG. 28. D. AUREUM.

together with its two parents, D. Findlayanum ♀ and D. aureum ♂. The seed parent in this case, it will be observed, has exerted a preponderating influence, and, indeed, if the history of the cross were not known, it would be difficult to say what modifying influence had been at work, at all events so far as the photograph is concerned, though in the living flower the characters of D. aureum are less difficult to trace. D. × Schneiderianum was obtained from a cross effected in the collection of Mr. Oscar Schneider, of Fallowfield, near Manchester, but the seedlings were raised by Mr. W. Holmes, gardener to M. C. Moseley, Esq., Grange Thorp, Rusholme, Manchester, and the first flowers appeared in 1887, when it was described by the late Professor Reichenbach.

ORCHDS AT THE ROYAL HORTICULTURAL SOCIETY.

A MEETING of the Royal Horticultural Society was held at the Drill Hall, James Street, Westminster, on May 8th, when there was an excellent display of Orchids, and the pressure in other departments being less than at the previous meeting, there was sufficient space available for the different exhibits. Two of the groups were of such exceptional merit as to secure the award of a Gold Medal in each case, and other exhibits were of excellent quality. The members of the Orchid Committee present were:—Norman C. Cookson, Esq., in the Chair, and Messrs. H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, E. Hill, J. Jaques, H. Little, C. J. Lucas, H. T. Pitt, J. W. Potter, T. Rochford, H. A. Tracy, H. J. Veitch, W. H. Young, and J. O'Brien (Hon. Sec.).

Leopold de Rothschild, Esq., Gunnersbury Park (gr. Mr. Reynolds), staged a magnificent group of Vanda teres, bearing an aggregate of over two hundred spikes, and artistically surrounded by graceful foliage plants. The group secured the award of a Gold Medal.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged a beautiful group, consisting largely of Odontoglossums, to which a Silver Flora Medal was given. It included some richly blotched forms of O. crispum, O. × Wilckeanum, O. × Andersonianum and other hybrids; also some good Miltonia Roezlii, &c. A First-class Certificate was given to a most beautiful hybrid called O. × Wilckeanum Pittianum.

Lt.-Col. Shipway, Grove House, Chiswick (gr. Mr. Walters), staged a small group of Cattleyas and other things, in which some forms of Cattleya Mendelii were noteworthy. A Silver Banksian Medal was awarded.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent a fine, broad-petalled form of Odontoglossum crispum with flowers of a bright canary-yellow tint, which received a First-class Certificate under the name of O. c. aureum rosefieldense.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent a small group, containing some beautiful forms of Cattleya Mossiæ, the rare Lælia Boothiana, &c. An Award of Merit was given to L. purpurata Ethel Gray, a beautiful white form with rich purple-rose in the front of the lip.

W. M. Appleton, Esq., Weston-super-mare, received an Award of Merit for a fine hybrid called Cypripedium × Phœbe (philippinense × bellatulum), having ivory-white sepals and petals slightly tinged with green, and the dorsal sepal and broad petals striped with purple.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited a plant of the rare and curious little Masdevallia O'Brieniana, bearing small yellow flowers barred with brown at the base of the leaves. It received a Botanical Certificate.

A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Humphreys), also received a Botanical Certificate for Epidendrum vesicatum, a species having glaucons, concave leaves, and a terminal head of whitish flowers.

J. Colman, Esq., Gatton Park (gr. Mr. Bound), exhibited a fine form of Odontoglossum × Andersonianum Ruckerianum, a fine stand of Cymbidium Lowianum, and Odontoglossum spikes, arranged with Asparagus plumosus, and a smaller floral device made up of Sophronitis grandiflora, Masdevallia Veitchiana, Lælio-cattleya × Schilleriana, Vanda suavis, &c.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), sent some good flowers of Cattleya Schrœderæ, and an interesting hybrid derived from Dendrobium nobile × Farmeri, which, however, nearly resembled the seed parent in size and colour, a curious case of prepotency, somewhat analagous to that seen in D. × Backhousei.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Morris), sent two splendid cut spikes of Cattleya Lawrenceana.

R. Brooman-White, Esq., Arddarroch, Garelochead (gr. Mr. Cole), sent five cut spikes of Odontoglossum × Andersonianum Ruckerianum, and Cattleya Schrœderæ.

Messrs. James Veitch & Sons, Chelsea, staged a superb group of species, to which a Gold Medal was given. Among the more noteworthy plants may be mentioned Lælio-cattleya × G. S. Ball (L. cinnabarina ♀ × C. Schrœderæ ♂), with handsome flowers nearly uniformly orange-coloured, Zygocolax × Veitchii, Chysis × langleyensis, Epidendrum × O'Brienianum giganteum, much larger than the original, E. × langleyense, and numerous other better known hybrids, in fine condition. Among the species were a fine series of Cattleya Mendelii, C. Schrœderæ, Miltonia Phalænopsis, a fine example of Odontoglossum pulchellum, and various other showy things too numerous to mention. An Award of Merit was given to Lælio-cattleya × Hyeana (L. purpurata ♀ × C. Lawrenceana ♂), a very richly-coloured hybrid, which first flowered in 1894.

Messrs. Linden, L'Horticulture Coloniale, Brussels, staged a beautiful group, to which a Silver Flora Medal was given. It contained many finely spotted forms of Odontoglossum crispum, some good O. Pescatorei, a fine O. triumphans, some beautiful natural hybrids, among which forms of O. × Adrianæ were conspicuous, and a large and richly-coloured form of Miltonia vexillaria, called Memoria Lindeni. An Award of Merit was given to Odontoglossum crispum tessellatum, a fine form, blotched and marbled with reddish purple, and tinged with purple on the back of the segments.

Messrs. F. Sander & Co., St. Albans, showed Lælio-cattleya × Harold Morris (Cattleya Schilleriana × Lælio-cattleya × Schilleriana), fairly intermediate in character, and with a rich crimson-coloured lip.

THE TEMPLE SHOW.

THE Society's great Annual Show was held, as usual, in the Inner Temple Gardens, Thames Embankment, on Wednesday, Thursday, and Friday, May 23rd to 25th. The weather on the opening day was very showery, which had some influence on the attendance, though the tents were inconveniently crowded at times. The Queen of Sweden visited the show on the opening day, and H.R.H. the Prince of Wales on the following day.

The Orchid exhibits were numerous, and in excellent condition, the general opinion being that many of the plants were above the average in quality. In some cases more space could have been filled had it been available, but if curtailment leads to greater selection being practised, it is not an unmixed evil, though cases of overcrowding were again not altogether absent.

The Orchid Committee was represented as follows :—H. J. Veitch, Esq., in the Chair, and Messrs. H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, J. G. Fowler, J. T. Gabriel, E. Hill, A. Hislop, J. Jaques, W. B. Latham, G. W. Law-Schofield, H. Little, E. V. Low, H. T. Pitt, T. Rochford, F. J. Thorne, H. A. Tracy, R. B. White, C. Winn, W. H. Young, and J. O'Brien (Hon. Sec.).

The group staged by the President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), was again the premier one, and most effectively arranged. It contained about 150 distinct kinds, many of the plants being models of good culture, and as duplication of exhibits was largely avoided it was full of interest from end to end. It was specially staged as "Not for competition." To describe such an exhibit in detail is obviously impossible with the space at command, and we have, therefore, omitted many of those strongly represented in other groups. Epidendrum radicans was represented by a splendid plant bearing fifteen fine sprays of flowers, other members of the genus being E. Endresii, E. × Endresio-Wallisii, and E. × Berkeleyi. Aërides Houlletianum carried three beautiful racemes. Dendrobiums were represented by the rare D. Jerdonianum, a charming plant of D. linguæforme, D. Victoria-Regina, D. Johannis, D. × Nestor, and D. atroviolaceum. Of the Anœctochilus group we noted A. concinnus, Rollissoni, xanthophyllus, Hæmaria Dawsoniana, and Macodes Petola. Our notes comprise that rare little gem, Capanemia uliginosa, the remarkable Cirrhopetalum Collettii, the brilliant Cochlioda Nœtzliana, Cœlogyne Dayana, Cymbidium madidum and tigrinum, Cypripedium Druryi, C. × Chamberlaino-insigne, C. × Youngianum, Epicattleya × radiato-Bowringiana, Epiphronitis × Veitchii, Lycaste cruenta, Masdevallia × Courtauldiana, Estradæ, ignea, O'Brieniana, × Shuttryana Chamberlainii, and xanthina, Maxillaria Houtteana, Microstylis Scottii, Odontoglossum ×

Andersonianum Edithiæ, brevifolium, and crinitum sapphiratum, Oncidium nubigenum, phymatochilum, pubes, sarcodes, and tetrapetalum, Phalænopsis Lueddemanniana, Pleurothallis macroblepharis and ornata, Polystachya ceres and pubescens, Renanthera Imschootiana, Saccolabium gemmatum, Spathoglottis × aureo-Vieillardii, and Zygopetalum rostratum. The effect of such a group, backed up by all the showy species of the season, may perhaps be imagined by those who had not the good fortune to see it. We should add that a fine example of Miltonia × Bleuana bearing five spikes received a Cultural Commendation, and Dendrobiums candidum and hercoglossum each a Botanical Certificate.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), also staged a superb group in most effective style, which deservedly gained a Gold Medal. It contained some fine Odontoglossums, of which O. Uro-skinneri, Œrstedii, and some good O. citrosmum deserve mention, Miltonia Roezlii alba, M. × Bleuana and M. vexillaria Memoria G. D. Owen, the two latter magnificent examples, three noble examples of Cymbidium Lowianum, C. L. concolor with four spikes, Cattleya Skinneri alba, C. Lawrenceana of exceptional brilliancy, and other good forms, Epiden-drum falcatum with sixteen and E. Wallisii with about forty flowers, Dendrobium Parishii, Cypripedium bellatulum album, splendid masses of C. barbatum, and many other showy things, together with the rare Stenia pallida, Pholidota imbricata, Cœlogyne Schilleriana and aspersa, Promenæa xanthina, Phalænopsis Boxallii, &c.

W. A. Gillett, Esq., Fairoak Lodge, Eastleigh (gr. Mr. Carr), staged a fine group of well-grown things, which gained a Silver-gilt Flora Medal. The forms of Cattleya Mossiæ were excellent ; we also noted good examples of Oncidium sphacelatum and ampliatum, Cypripedium niveum, the hand-some Odontoglossum Edwardii, polyxanthum, and more familiar types, the rare Bifrenaria Harrisonæ pubigera, &c.

Ludwig Mond, Esq., Avenue Road, Regent's Park (gr. Mr. Clarke), received a Silver Flora Medal for a bright and effective group, containing some good examples of Cattleya Mossiæ, Mendelii, Schrœderæ, Dendro-bium atroviolaceum and densiflorum, Brassia verrucosa in fine condition, Cymbidium Lowianum, Lælia purpurata, and some good Odontoglossums.

The Marquis de Wavrin, Somerghem, Belgium, received a Silver Banks-ian Medal for a group of excellent forms of Cattleya Mossiæ, an Award of Merit being also given to C. M. Rouseleana, a large, rosy form with very richly coloured lip. He also sent a long branch of Vanilla planifolia bearing twelve fine bunches of fruit.

E. Ashworth, Esq., Harefield Hall, Wilmslow, (gr. Mr. Holbrook), sent two beautiful forms of Odontoglossum × Adrianæ, called Ernest Ashworth and Arthur Ashworth, each of which received a First-class

Certificate. The former was white, with large, red blotches evenly arranged, and the latter, pale yellow with numerous blotches arranged in zones near the centre. He also sent a few good O. crispum, Cattleya intermedia Parthenia, Miltonia × Bleuana, and Phaius × Cooksoniæ.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent Lælia purpurata Littleana, a very fine form having white sepals and petals, and a lip with a purple area on each side of the white centre, and the throat yellow with dark lines. It received a First-class Certificate.

M. Jules Hye-Leysen, Coupure, Gand, sent a highly-coloured Lælio-cattleya, derived from L. tenebrosa ♀ and C. Lawrenceana ♂, called × Major-General Baden-Powell, a fine form of Odontoglossum × Adrianæ bearing a single large and very evenly spotted flower, and a magnificent hybrid from O. Harryanum ♀ and O. luteopurpureum ♂, to which a First-class Certificate was given under the name of O. × Souvenir de Victor Hye-Lebrun.

G. W. Law-Schofield, Esq., Rawntenstall, Manchester, received an Award of Merit for the handsome Cypripedium × Mary Beatrice (× Goweri × bellatulum).

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), showed a good form of Cattleya intermedia.

Messrs. F. Sander & Co., St. Albans, staged a large and very handsome group, containing many species and hybrids of the Cattleya group, numerous good Odontoglossums, in which forms of O. × Adrianæ and its parents, the puzzling O. harvengtense, a form of the rare O. × Horsmanii, and other natural hybrids were noteworthy. We observed also Cœlogyne Dayana, the quaint Bulbophyllum barbigerum, Dendrobium Victoria-Regina, Miltonia × Bleuana grandiflora, M. vexillaria, Cypripedium × superbiens and × Gertrude Hollington, some brilliant Masdevallias, a fine example of Zygopetalum grandiflorum, Cattleya Warneri, and a form of C. Schilleriana with dusky-brown sepals and petals, and numerous examples of the showy species generally. A First-class Certificate was given to Lælio-cattleya × callistoglossa excelsa, probably unrivalled for size and richness of colour, and an Award of Merit for Cattleya Mossiæ Our Queen, a superb form of the C. M. Reineckeana type. A Gold Medal was awarded "for Orchids, Azaleas, &c."

Messrs. Charlesworth & Co., Heaton, Bradford, staged a splendid group to which a Silver Cup was given. It contained numerous examples of most of the showy species of the season, the forms of Cattleya Schrœderæ being very good, also C. Skinneri alba, several C. Schilleriana, C. Warneri, Cymbidium Lowianum, and numerous Odontoglossums. We also noted some good Oncidium sarcodes, O. concolor, Marshallianum, and the rare O. pulchellum, Brassia verrucosa,

Cypripedium bellatulum album and Rothschildianum, Zygopetalum × Perrenoudi, Lælio-cattleya × Hippolyta, L.-c. × Lady Miller (C. granulosa × L. cinnabarina), Masdevallia × Ajax, × Imogen, × Pourbaixii, &c., &c. Awards of Merit were given to Lycaste × Balliæ, a brilliant form, and Cypripedium × Mary Beatrice (× Goweri × bellatulum).

Mr. J. Cypher, Cheltenham, also received a Silver Cup for a splendid group which it is equally impossible to describe adequately in the space at command, but good examples of Lælia purpurata, Ada aurantiaca, Sophronitis grandiflora, Odontoglossums, and Cattleyas were prominent in it. The latter included C. Aclandiæ, C. Forbesii, and C. Mendelii Oddity, a nearly uniformly light lavender form, with a long, petal-like lip, having a narrow yellow line down the centre. Other interesting things were Dendrobium Victoria-Regina, D. transparens, D. nobile virginale, D. atroviolaceum, Epiphronitis × Veitchii, Oncidium nubigenum, Papilio, and sarcodes, Odontoglossum nævium, × mulus, × Coradinei, Spathoglottis Lobbii, &c.

Messrs. Linden, L'Horticulture Coloniale, Brussels, staged a fine group consisting mostly of Odontoglossums, with some good Miltonia vexillaria, and a fine form of Cymbidium Lowianum, and were awarded a Silver Cup. Among the Odontoglossums, were the rare O. × Wendlandianum, the clear yellow O. gloriosum xanthotes, O. Uroskinneri, O. citrosmum album, O. sceptrum, O. × mulus, some charming forms of O. × Adrianæ, and various other hybrids, together with fine forms of O. crispum, and other well-known species. Awards of Merit were given to O. crispum Confetti, a white form evenly bloched with purple, and O. c. radiosum, cream-white with red-brown spots arranged in radiating fashion.

Messrs. Hugh & Co., Bush Hill Park, also received a Silver Cup for a very fine group, containing most of the showy species of the season in excellent condition. A few of those noted were the brilliant Dendrobium sanguineum, D. Parishii, D. Bensonæ, Vanda × Miss Joaquim, Cypripedium Lawrenceanum Hyeanum, C. × Aylingii, Phalænopsis × intermedia, and P. × Lady Rothschild, Lælio-cattleya × Hon. Mrs. Astor, various good Cattleyas, Odontoglossums, &c., which, as in other cases, we cannot enumerate in detail. An Award of Merit was given to Cymbidium × I'Ansoni, a remarkable natural hybrid, probably derived from C. Lowianum and C. Tracyanum, which is described on page 191.

Messrs. Stanley Ashton & Co., Southgate, staged an effective group of showy things, to which a Silver-gilt Flora Medal was given. It contained many fine forms of Cattleya Mossiæ, Miltonia vexillaria, Lælia purpurata, and various Odontoglossums, together with Lycaste Lawrenceana and Deppei, Oncidium cornigerum, concolor, and Marshallianum, Epidendrum vitellinum, Cypripedium hirsutissimum, &c.

Messrs. B. S. Williams and Son, Upper Holloway, also staged an effective group of good things, which gained a Silver Flora Medal. It contained good forms of Vanda tricolor and suavis, Oncidium concolor and sarcodes, Calanthe veratrifolia, Anguloa Clowesii, Platyclinis latifolia, together with good Cattleyas, Odontoglossums, and Lælia purpurata.

Messrs. James Backhouse & Son, York, also received a Silver Flora Medal for another pretty group, including Lælia lobata, some good L. purpurata, Dendrobium nobile, together with Cattleyas, Odontoglossums, Cypripediums, &c., in good condition.

M. Ch. Vuylsteke, Loochristi, Ghent, showed three beautiful forms of Odontoglossum × Rolfeæ, of which O. × R. optimum received a First-class Certificate, and O. × R. ardentissimum an Award of Merit. Both were white spotted with purple, those of the former being larger and more arranged in bars. The other had the ground tinged with yellow.

M. A. A. Peeters, St. Gilles, Brussels, staged a particularly interesting exhibit, namely a fine specimen of Eulophiella Peetersiana bearing a beautiful spike of twelve flowers and eight buds, for which a Cultural Commendation was given, also a few other fine things, which carried off no fewer than four Awards of Merit. These were Lælio-cattleya × Massangeana (L. tenebrosa × C. Schilleriana), L.-c- × Herode (C. × O' Brieniana × L.-c. × elegans Turneri), Odontoglossum crispum Victoria-Regina, a fine form blotched with reddish purple, and O. c. Mrs. F. Peeters, richly blotched with purple and the ground tinged with rose. The group also contained a good O. × Adrianæ, a brilliant form of Lælio-cattleya × Canhamiana, and L.-c. × Ceres (L.-c. × Phœbe × C. Mossiæ).

Messrs. James Veitch and Sons, Chelsea, received an Award of Merit for Lælio-cattleya × G. S. Ball (L. cinnabarina ♀ × C. Schrœderæ ♂), a pretty hybrid with rich orange flowers, slightly darker on the front of the lip.

M. Fl. Claes, Brussels, sent a nice little group of Odontoglossum crispum, mostly typical forms of good shape and substance.

Messrs. Fisher, Son, & Sibray, Handsworth Nurseries, Sheffield, had a good Chysis bractescens, Ansellia humilis, and a few good Cattleyas, Lælia purpurata, Odontoglossums, Cypripediums, and Oncidiums, in a group of miscellaneous plants.

Lastly, we noted among the groups of hardy plants many nice examples of hardy Cypripediums and species of Orchis, which collectively would have made a most interesting group, could they have been brought together.

DENDROBIUM × WALTONI AND ITS PARENTS.

We have now three natural hybrid Dendrobiums whose parentage has been proved experimentally. Two were included in my paper, "Hybridisation viewed from the standpoint of Systematic Botany" (*Journ. Roy. Hort. Soc.*, xxiv., pp. 181-202), namely, D. × Ainsworthii and D. × Rolfeæ, but I have since found the record of a third, which I had overlooked. At a meeting of the Royal Horticultural Society held on April 12th, 1892, it is recorded that Messrs. James Veitch and Sons exhibited "Dendrobium crassinode-Wardianum ×, which was raised by them, and serves to verify

Fig. 29. D. × Waltoni.

Fig. 30. D. Wardianum. Fig. 31. D. crassinode.

the previously imported natural hybrid of the same parentage" (*Gard. Chron.*, 1892, xi., p. 502). Mr. Seden tells me that this record is quite correct, and that the firm has still one or two of the seedlings, though not now in flower. This plant is generally known under the joint names of its two parents, but it was described by Reichenbach, in 1886, under the name of D. × melanophthalmum (*Gard. Chron.*, 1886, xxv., p. 426), and in the previous year, probably by the late Mr. Gower, as D. × Waltoni (*Garden*,

1885, xxvii., p. 119), which appears to be its earliest name. It flowered in the establishment of Messrs. Hugh Low and Co. among imported plants, and was described as a natural hybrid between D. Wardianum and D. crassinode, and quite intermediate in character. Even this was not its first appearance, for in the following year Reichenbach remarked:—"The history is difficult to be given. . . . I have a remembrance of Mr. Borwick (of Walthamstow) having spoken of a hybrid, even having sent flowers. I was then as incredulous as St. Thomas himself." The date is not given, but it was prior to April, 1879, when it appeared for the second time. Its subsequent history has already been given in these pages, and it is satisfactory to have its origin fully cleared up. The accompanying figure represents D. × Waltoni (fig. 29) and its two parents, D. Wardianum (fig. 30) and D. crassinode (fig. 31), and clearly shows the intermediate character of the hybrid.

R. A. R.

ORCHIDS AT WILMSLOW.

THREE very interesting collections are situated at Wilmslow, Cheshire, within a short distance of Manchester, which the other day we had the pleasure of inspecting.

DR. HODGKINSON'S COLLECTION,

situated at The Grange, Wilmslow, is a particularly interesting one, because of its representative character, and the presence of various rarities not generally met with. For example we noted a good plant of the rare Bulbophyllum giganteum, several Bolleas and Pescatoreas, some of which were obtained in 1894, and continue to grow well, Pescatorea Roezlii being now in bud; the brilliant orange-scarlet Dendrobium subclausum, a fine plant of Lælia monophylla which has been in the collection six years and has received a Cultural Certificate from the Manchester Orchid Society, D. amethystoglossum which flowered very freely a short time ago, and various other things which, not being in flower, were not specially noted. It was interesting to see the type plant of Dendrobium Hodgkinsoni in thriving condition.

Of course the more familiar species are also well represented, and of these a nice lot were in flower. In the Odontoglossum house were examples of O. Cervantesii and its var. roseum, O. Rossii, O. crispum, O. luteopurpureum, O. pulchellum, O. Hallii, and O. × Andersonianum, one example of this just expanding having very large blotches on the sepals. The pretty little Oncidium cheirophorum was also in flower.

In another house was a varied collection of Masdevallias, M. caudata

and others being in flower, examples of the brilliant little Sophronitis grandiflora, some old plants of Cattleya citrina still thriving, two being in flower, Epidendrum vitellinum not yet expanded, and a finely-flowered example of Oncidium cucullatum. Lælia grandiflora (majalis) also succeeds well here suspended near the roof, and has been cultivated for years. Some trouble has been experienced in getting Disa grandiflora to grow well, but some plants, stood on large pans of sand and kept constantly moist, were in thriving condition.

The Dendrobium house contained some interesting things, as D. nobile nobilius, D. lituiflorum, well-flowered examples of D. fimbriatum, three beautiful examples of the charming little D. Loddigesii crowded with buds, which have flowered well for the last ten years, D. Wardianum, D. crassinode, D. crepidatum, D. aggregatum, &c., together with Vanda teres, Saccolabium ampullaceum, Angræcum Leonis, and Chysis bractescens. A seedling from Dendrobium × Ainsworthii Leechianum ♀ and D. Wardianum ♂ had passed out of flower.

In an adjoining Cattleya house we noticed three fine specimens of Dendrobium infundibulum flowering very freely. One of them had fourteen flowering bulbs, the best of which carried seven flowers, forming quite a picture. There were also nice examples of Miltonia Phalænopsis, M. vexillaria, in bud, Lycaste Skinneri, and Cattleya Schrœderæ, together with various other things not yet in flower.

A warm house contained a nice collection of Phalænopsis obtained from the Philippines, where indeed they were cultivated until the war broke out there, and now getting nicely established. Here we noticed in flower examples of Miltonia Roezlii, a fine Phaius Wallichii, and various good Paphiopedilums, as Mastersianum, barbatum, the beautiful callosum Sanderæ, not quite expanded, purpuratum, concolor, Hookeræ, Lawrenceanum, Sanderianum producing a fine spike, × Germinyanum, Rothschildianum, altogether making a brilliant display. Eulophiella Elisabethæ was carrying a young pod which was remarkable for being of a porcelaine colour, with purple angles. This and the Phaius had been crossed and re-crossed, and it will be interesting to watch the result.

The collection contains many hybrid seedlings in thriving condition, and in this connection it is interesting to note the progress made in six years, since our former notes were made (*ante*, ii, pp. 195-7). Some of the seedlings are from very promising crosses, but we did not take special notes of them. One plant, however, we feel a special interest in, as it is said to be the result of an experiment mentioned in our former notes (Cypripedium philippinense × niveum), and it should soon reach the flowering condition.

Dr. Hodgkinson finds the culture of these plants a delightful hobby,

and his gardener, Mr. Woore, is equally enthusiastic, and has been very successful too. Special pains have been taken to keep the atmosphere well supplied with moisture, and at the same time to secure proper ventilation. A hygrometer is suspended in each house, and indeed is considered indispensable, because one can see in an instant whether the atmosphere is in a proper condition, and this is a point of the first importance in the culture of these beautiful plants.

G. Shorland Ball, Esq.'s Collection.

Within a comparatively short distance of the preceding may be found another very interesting collection, which is pretty regularly represented at the meetings of the Manchester and North of England Orchid Society, namely, that of G. Shorland Ball, Esq., Ashford, Wilmslow. Here are about five well-arranged houses, in which we found a good general collection in excellent condition, and a beautiful display of flowers.

The Dendrobium house was quite a picture, so numerous were the plants in flower, though a few were past for the season, among which we cannot refrain from mentioning two superb plants of D. Falconeri, each of which had borne about 360 flowers, and they must have presented a brilliant spectacle when at their best. Among those in flower were D. nobile nobilius, D. n. Amesiæ, D. n. Cypheri, D. n. Cooksonianum, D. n. Sanderianum, D. n. Backhouseanum, and various examples of the type. Nor must we forget the distinct and charming D. n. Ballianum, which is naturally well looked after here. Several plants of D. Wardianum were a mass of flowers, and with them was a splendid example of the natural hybrid D. × Waltoni, which came out of the same importation, and was not recognized until it flowered, and in profusion too. Some plants of D. aureum were very brilliant, and we also noted D. Findlayanum, D. Devonianum, a good D. primulinum, D. cariniferum, and D. crassinode album. Among those not in flower was D. spectabile in fine condition. Hybrids were also present in quantity, and included various forms of D. × Ainsworthii, × Rubens, × Aspasia, × Schneiderianum, × melanodiscus, × Juno, × Luna, × rhodostoma, &c., altogether making a most brilliant display.

An adjacent house devoted to Cypripedes and other plants contained many fine things, including a good Cœlogyne pandurata bearing a fine spike of nine buds, two good plants of the graceful Angræum Sanderianum, one of which was figured at page 152 of our last issue, Diacrium bicornutum with six spikes, Phalænopsis Lueddemanniana, and a splendid piece of Bulbophyllum grandiflorum not now in flower. Cypripediums were nicely represented, and included two Paphiopedilum × Deedmanianum, one having three expanded flowers on the spike, the rare P. Druryi, P. barbatum with 13 flowers, P. Lawrenceanum, P. Argus, P. × selligerum

majus in fine condition, and P. × pavoninum, a home raised seedling from P. venustum and Boxallii, said to be the first which has flowered in the collection. P. callosum Sanderæ was throwing up its scape, but to enumerate the choice things not in flower would take up too much space. Phragmipedilum × Schrœderæ was in fine condition, also P. × Sedeni candidulum, and P. × grande, with its variety atratum.

The Odontoglossum house contained nice examples in flower of O. Rossii, maculatum, some good crispum, gloriosum, pulchellum, several pretty forms of × Andersonianum, Hallii, one of which had a spike of eighteen flowers, and others. A form of O. × loochristiense, in bud, was obtained with the record O. crispum roseum ♀ × triumphans ♂, and should prove interesting. Here were also good examples of Ada aurantiaca, Masdevallia × Veitchiana and caudata, Oncidium concolor and macranthum, and nice, healthy examples of Disa × Veitchii in bud.

In an Intermediate house was a wonderful specimen of Oncidium tigrinum, which it would be difficult to match, a very richly coloured example of Phaius × Norman, forms of Masdevallia Chimæra, two good Miltonia Phalænopsis, Cymbidium eburneum, and the rare C. tigrinum in bud.

Of the Cattleya house a very brief notice must suffice. We noted a nice example of Cattleya Schrœderæ bearing nine flowers, the handsome C. × Louis Chaton, good examples of Oncidium sarcodes and Epidendrum Wallisii, a good plant of Sobralia macrantha Kienastiana, and many other good things; also a fine batch of seedling plants which have been acquired from various sources, whose growth is watched with interest, and whose flowering is awaited—let us hope—with all the patience necessary. It is only a question of time, and we wish Mr. Ball the same success that has attended him in other departments of his interesting collection.

The Harefield Hall Collection.

The fine collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, deserves a more detailed account than we shall be able to give, but in a somewhat hurried look through about eight different houses we saw many very interesting plants, and among them flowering examples of the very rare Chysis Limminghei and Dendrobium sulcatum were among the most noteworthy, also the pure white D. nobile Ashworthianum, whose sepals and petals are more twisted than most others, which has led to a doubt whether it is a true nobile form.

The Dendrobiums had made a very fine display, but had been a little earlier than Mr. Ball's, and were past their best. They contained many of those previously mentioned, together with the pretty D. × Imogen, D. × Cybele, D. × Sibyl, D. × Rolfeæ, D. × Cassiope, the rare D. O'Brienianum, and some choice varieties of well-known species. Five good plants

of D. atroviolaceum must not be omitted, and one carried a good pod crossed with D. Hodgkinsoni.

Odontoglossums were also numerous, and besides the more familiar kinds we observed the charming O. nævium, the purple O. Edwardi, O. Hunnewellianum, O. × excellens, with both its parents, &c. One fine O. crispum carried a spike of 16 flowers, and among seven forms of O. × Andersonianum was one having a spike of 4 branches and 27 flowers. Here were also the charming little Epidendrum Endresii, Cœlogyne cristata Lemoniana, the rare little Disa sagittata, some good Cymbidium Lowianum, Zygopetalum crinitum, Masdevallia × Pourbaixii, and the more familiar things associated with them at this season.

Cattleyas and Lælias, both species and hybrids, are represented here by many choice kinds as well as the commoner ones, and it was interesting to see the rare, if not unique, example of Lælia × Finckeniana, figured at page 9 of our second volume, of course not now in flower. Various other rarities were also pointed out. Lælio-cattleya × Thorntoni, was in bud, and we saw nice examples of Cattleya Schrœderæ, C. intermedia, and C. Lueddemanniana in flower, but it was rather too early for most of this group, though it is very strongly represented. It was interesting to see some plants, obtained from M. Peeters, planted entirely in leaf-mould, which left nothing to be desired in the matter of health and vigour.

Cypripedes are well represented and many choice crosses were pointed out, some on the point of flowering. Some good things were in flower, among them three plants of Paphiopedilum × Deedmanianum, and P. × Goweri magnificum, besides commoner kinds, while six plants of P. Rothschildianum were throwing up spikes, and P. callosum Sanderæ was in bud.

Among other things we noted some fine Phaius × Norman, Lycaste brevispatha, Phalænopsis Schilleriana, and the handsome Miltonia × Bleuana, this also doing well in leaf mould.

In conclusion we may add that the cultural department is well looked after by Mr. Holbrook, and that the collection contains many striking things which we hope to hear more of in the near future.

THE HYBRIDIST.

Lælio-cattleya × Massangeana.

This is a handsome and very interesting hybrid raised by M. A. A. Peeters, of St. Gilles, Brussels, from Lælia tenebrosa ♀ and Cattleya Schilleriana ♂, and closely resembles the former in colour, while the shape is most like the latter, though somewhat modified in detail. The sepals and petals are nearly three inches long, strongly undulate, and of that peculiar shade of

copper-brown so characteristic of the seed parent; while the lip is three-lobed, with the front lobe and apex of the side lobes rich purple, passing into white towards the base of the tube, and more or less veined with purple. The seed was sown in February, 1896, and the plant has now produced a raceme of two flowers. It is a very promising hybrid, and was exhibited by M. Peeters at the recent Temple Show, when it received an Award of Merit.

Lælio-cattleya × Herode.

This is another of M. Peeters' hybrids which received an Award of Merit at the Temple Show. The parents are Cattleya × O'Brieniana ♀ and Lælio-cattleya × elegans Turneri ♂, both being regarded as natural hybrids, and if correctly understood, the present one will have a combination of four species in its ancestry. It is at present a dwarf, compact plant, bearing a single very handsome flower of medium size, and fairly intermediate in character. The sepals and much broader petals are light rose-purple, and the lip three-lobed, well-expanded in front; the front and side lobes of a rich crimson-purple, a rather large, bright yellow disc, and the outer side of the tube suffused with rose-colour. There is more yellow than might have been expected from the parentage, and it sets the flower off to great advantage. The seed was sown in August, 1896.

Lælio-cattleya × Ceres.

A third Lælio-cattleya was also shown by M. Peeters, and is scarcely less promising than the others, though it obtained no award on this occasion. The parents are Cattleya Mossiæ ♀ and Lælio-cattleya Hippolyta var. Phœbe ♂, itself a hybrid between the first-named and Lælia cinnabarina. The result is that in colour the Cattleya parent largely predominates, the fine orange of the pollen parent being reduced to a tinge of yellow suffusing the light pink sepals and petals, and a lip much resembling C. Mossiæ, somewhat reduced in size, and with a greater amount of rich orange-yellow on the disc. It is fairly intermediate in size, and from the fact that it carried only a single flower, it may be judged how far it yet falls short of its full development. The seed was sown in April, 1896.

Paphiopedilum × Manto.

A fine hybrid derived from Paphiopedilum Chamberlainianum ♀ and P. × Harrisianum superbum ♂ has flowered in the collection of Reginald Young, Esq., Sefton Park, Liverpool, and bears unmistakable evidence of its descent. It is fairly intermediate in character, for the colour and broad petals show a marked approach to the pollen parent, while in other respects the influence of the seed parent is equally well marked. The seed was

sown in December, 1894, and the plant has now produced a single flower, though the racemose character of the seed parent is sure to manifest itself as the plant becomes stronger.

PAPHIOPEDILUM × CYMATODES.

TWIN-FLOWERED scapes of the normally one-flowered section of this genus are now pretty common, but examples bearing three flowers are very rare, those we remember to have seen up to the present being P. Spicerianum

Fig. 32. PAPHIOPEDILUM × CYMATODES.

and P. × Rossianum. The annexed figure rspresents a plant from the collection of S. G. Lutwyche, Esq., Eden Park, Beckenham, and is reproduced from a photograph kindly forwarded by him. The plant is P. × beechense, a hybrid between P. Curtisii and P. superbiens, but as there is an earlier name for this hybrid we adopt it. Mr. Lutwyche remarks that it is the first example of this section bearing three flowers which he has seen. The peculiarity is probably due to the exceptional vigour on the part of the plant, arising from good culture, and in any case it is interesting to preserve such a graphic representation of it.

CALENDAR OF OPERATIONS FOR JUNE.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

FOR the tempertures of the various houses, see last month's Calendar; also for the general conditions and management of the same.

REPOTTING.—Do not omit this important work in any instance when it appears necessary, and get through with as much of it as is possible during the present month, for in no other month during the year will the plants so quickly take hold of the new materials. Let it always be the rule to keep newly potted plants for a time well shaded, and the surface of the compost well moistened with the syringe. Otherwise undue shrivelling and loss of foliage may result. In all cases, except where otherwise advised, clean, living sphagnum moss and fibrous peat in equal proportions, intermixed with a small amount of finely broken charcoal and crocks, is the best possible material in which to pot. Well drain the pots from half to three quarters full of broken pots, rubble, or something of a similar open nature. A liberal quantity of charcoal used in the drainage is a good thing, but, if new, it should first be well soaked in water and exposed to the weather. I prefer, after placing one large inverted piece over the hole at the bottom, for the remainder of the drainage to be broken rather small, the top layer being the smallest so that it presents an even, level surface. See that the compost comes well up to the base of the last formed pseudobulb so that the new roots may instantly enter the same. This should be done even at the risk of burying the bases of a few of the older or less important pseudobulbs.

There are a number of species which I find are generally grown best if repotted each year, and in nothing but fresh sphagnum moss intermixed with charcoal. They are chiefly Mormodes, Catasetums, and Cycnoches. These delight in an exceptionally long and dry rest from autumn until spring, or early summer, when they again commence to grow, and should be shaken right out, repanned or basketted. They should from this date be subjected to the brisk heat of the East Indian House, but much water should not be applied until the new growths are nicely advanced, and well stocked with new roots, when they should have liberal quantities until their blooming period has passed, and the growth is matured, when the resting period again commences. Avoid as much as possible letting the water lodge in the young growths, or they may possibly rot off, which they are certain to do if any kind of liquid insecticide gets there.

On the other hand, there are some few species which I find are best cultivated in nothing but peat, using no moss whatever. They are as follows:—Lælia crispilabia (Lawrenceana), L. Digbyana, L. glauca, Oncidium divaricatum, O. Harrisonianum, O. pulvinatum, and O.

splendidum. The peat need not be of the best fibrous nature, such as is sought for Dendrobiums and Cattleyas, but simply the ordinary turfs broken up in small lumpy pieces. The above, and other similar species having thick, fleshy foliage, should always be grown as near the glass as possible, as they like a good amount of light. Sandy, lumpy peat is a capital medium in which to grow a good many other species of Orchids, quite independent of any other material. Among these I would mention Cymbidiums, having seen some of the grandest specimens so grown without any moss or loam whatever. For *Zygopetalums*, too, I can also strongly recommend it, being a simple, clean, and easily obtainable article, the ordinary peat being quite good enough. Then again, there are the Sobralias, Spathoglottis, Stanhopeas, Phaius, Masdevallias, Maxillarias, Lycastes, Eulophias, Platyclinis, Grammatophyllums, Cypripediums, Cœlogynes, and Anguloas, for all of which peat alone is an excellent thing. I believe I have previously recommended a part of loam and leaf soil for some of these, which is very good, of course, and grows fine plants. Still, I very much doubt whether there is a more natural, healthy, clean, and at the same time inexpensive and effectual material for the above-mentioned kinds than sandy peat pure and unadulterated.

ONCIDIUM FLEXUOSUM.—This graceful little species is largely grown for decorative purposes—exhibitors finding it a great acquisition, being so light and elegant. It is generally grown in a stove, but grows there much less robust than when given a cooler treatment. I saw a specimen in an Odontoglossum house the other day, which deserved a Cultural Certificate, such enormous, fine, fat bulbs it had as to leave no doubt whether the cool treatment was suitable or not.

Such beautiful and invaluable species as Cattleyas Mossiæ, Mendelii, and Odontoglossum citrosmum should be helped forward into growth as speedily as possible after blooming is past, or they are apt to complete their psendobulbs very late in the season. Let them have the warmth of the Cattleya house and plenty of moisture supplied to them. That grand old species Odontoglossum grande, together with the nearly allied O. Insleayi and O. Schleiperianum, should likewise receive similar encouragement to assist the building up of stout pseudobulbs, from which to bloom in the autumn. Miltonia vexillaria has now practically finished blooming, and it is now a good time to re-pot, if necessary. Two parts of peat to one of sphagnum forms a good compost, and the pots should be rather small in comparison to the plant than otherwise. Miltonias are plants that do not require a lot of water at the root at any time, keeping much more healthy and free from spot when very moderately watered, but still, immediately after potting, they should be kept pretty moist, to avoid shrivelling and to assist the new roots which will quickly appear.

With intermediate temperature and care in watering, this species is one of the easiest to grow, and the same may be said of the pretty little M. Phalænopsis, and, indeed, the whole group. M. spectabilis and its variety Moreliana should be given a little more heat if they fail to do well.

THE AMATEUR'S HOUSE.—The weather, with the exception of a few days only, has been very unfavourable to Orchids, as indeed it has to other vegetation, both in and out of doors, but however much one may fume and worry it mends matters not one iota. The plants themselves seem not to object to await favourable weather before starting fairly and squarely into growth, therefore we need not get over-anxious, and endeavour by an excessive use of fire heat to make up for the absence of the sun and the obstinate persistency of the north-east wind. We have to fire up a little more, especially during the night, to prevent the cold from becoming excessive, and thus doing harm, but further than that it is needless to go, The only thing to do is to distribute moisture about the house and among the plants to correspond to the outside conditions, and await patiently the coming of proper growing weather. When this has arrived, there is one other thing to do, namely, to make the best possible use of it. A cold, cheerless time till the end of May shortens what may be termed the growing season, but still, if every encouragement is given afterwards, it amounts to the same thing by the end of season, because they grow so much more rapidly when once they start. By encouragement, I mean to say that for the next two months or so a little extra trouble should be taken to ensure a warm and moist atmosphere, with the absence of sudden falls of the temperature. long-continued cold draughts, &c. The house must be shaded and ventilated somewhat strictly in accordance to its requirements, and these are ruled by the outside climatic conditions. That the plants must be kept moist at the roots—not saturated—and that the atmosphere must be kept moist by the copious syringing of the plants, &c., at least twice daily, first thing in the morning and again early in the afternoon, when the shading should be removed and the ventilation closed, so as to store a brisk moist heat which will last well into the night—in fact, now that June is here, I think I might safely say all night, without it being necessary to light a fire. But this is much a matter for the grower's discretion ; all I need say is, if the nights are ordinarily warm the fire should not be needed.

SHADING.—A remark above reminds me that I ought to say that it is not absolutely necessary for the grower to employ removable shading. I have grown and have seen amateurs also growing remarkably good Orchids in houses having a permanent shading during the summer months of a thick coating of lime wash. But whether it is permanent or removable is again much a matter of discretion, for much depends whether the stages are near to the roof glass, or otherwise, and also on the aspect of the

house. Why I mention this is because I think permanent shading should not altogether be condemned for the amateur who finds it necessary to leave his house to the mercy of others for the greater part of the day. The chances are that his house would be better so shaded, than someone to forget to roll down the blinds on a particularly hot day.

It will now be even a greater pleasure for the interested grower to look over his plants and note the progress made day by day or week by week, with what rapid strides the new growths advance, and with what relish the new roots seem to take to the new moss placed for them. In addition to the over-head syringing with tepid water, it will be necessary also to water at the roots, but when doing this let the condition of the plant, whether actively growing or otherwise, be the guide. For instance, Cattleya Gaskelliana and Warscewiczii (gigas) will be in full swing, and will demand more than Lælia purpurata and Cattleya Mossiæ, many plants of which have yet scarcely made a move, but this difference of treatment should extend only so far as root watering is concerned. Do not further distress debilitated plants by allowing them to carry a bloom or spike of bloom, and do not unduly tax fairly strong plants by allowing the bloom to remain on too long, much better to cut off the spike and place it in water. It has been rather cold for the cool kinds removed to the frame last month, but providing little water was given, and they were covered with mats during the coldest nights, no harm whatever could possibly happen. The same rule when watering must be also here observed. Odontoglossum crispum in active growth will require a liberal supply, whilst O. Rossii or Cervantesii, scarcely yet starting to grow, should be spared. The latter are from Mexico, and as I stated last month, it is possible to injure by kindness in this respect.

ORCHIDS IN SEASON.

SEVERAL beautiful Dendrobium flowers are sent from the collection of W. P. Burkinshaw, Esq., of Hessle, near Hull, by Mr. Barker, including some brightly coloured forms of D. nobile, D. × Ainsworthii flavescens, a large and handsome form, having the circumference of the lip outside the maroon disc very distinctly tinged with yellow, and the sepals and petals tinged with the same colour, D. × melanodiscus var. hesslense (D. × Ainsworthii splendidissimum × Findlayanum), a pretty form of this hybrid, and D. × Rolfeæ roseum, a charmingly coloured variety.

Two beautiful hybrid Odontoglossums have flowered among recently imported Odontoglossums in the collection of R. le Doux, Esq., of West Derby, Liverpool, flowers of which are sent by Mr. Archer. One is O. ×

Andersonianum Ruckerianum, a nicely tinted form, bearing largish blotches on the sepals and petals, the other a bright yellow, regularly blotched form of O. × Denisonæ (Wilckeanum), which should develop into a good thing.

Several good Odontoglossums are sent from the collection of T. Baxter, Esq., of Morecambe, by Mr. Roberts, and include good forms of O. Pescatorei, crispum, and a dark luteopurpureum, with a few interesting hybrids, which exhibit the usual amount of polymorphism, so much, indeed, that one or two can scarcely be identified with certainty. A form of O. × Coradinei has a rather broad, short lip, showed a well marked crispum influence, and a very regularly blotched form of O. × Andersonianum has very little of the acuminate shape so common in that hybrid. The others are a form of O. × Denisonæ, a very yellow form of O. × Adrianæ, and what may be a very small O. luteopurpureum or a form of O. × mulus showing but little of the gloriosum character in the lip. Flowers of the charming Dendrobium Devonianum are are enclosed.

Two splendid Lælio-cattleyas are sent from the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, by Mr. Young. L.-c. × callistoglossa is a massive flower of over nine inches in diameter across the petals, and the lip very richly coloured, and L.-c. × Henry Greenwood is a richly-coloured form derived from L.-c. × Schilleriana and Cattleya × Hardyana, which is further interesting because both parents are themselves of hybrid origin. It most resembles the pollen parent in general character.

EPIDENDRUM PURPURACHYLUM.

ANOTHER Brazilian Epidendrum has appeared in cultivation, which was previously only known from description and a drawing by M. Barbosa Rodrigues. A plant, which was said to have been received with Lælia Jongheana, has just flowered with Mr. F. W. Moore, at Glasnevin, and, on comparison, proves to be E. purpurachylum, described in 1877 (*Rodr. Gen. et Sp. Orch. nov.*, i., p. 49.) The author gives the habitat as Queimados and Parahyba do Sol, in the province of Rio de Janeiro, where it grows on trees of Mimoseæ and Myrtaceæ, while the present individual appears to have come from the neighbouring province of Minas Geraes. It belongs to the Encyclium group, and approaches E. selligerum in many respects. The sepals and petals are dull olive green, tinged with brown, and the corrugated front lobe of the lip is deep purple with a broad, whitish-yellow margin. The flowers are very fragrant, not unlike violets. Its appearance is interesting, as our knowledge of this section of the genus is still very imperfect.

R. A. R.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during June, on the 5th and 19th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

A special meeting of the Society will also be held at the Old Deer Park, Richmond, on Wednesday, June 27th, in conjunction with the Annual Flower Show of the Richmond Horticultural Society. Single plants for certificate may be entered with the Secretary on the ground on this date up to 10.45 a.m., and may be removed at 8 p.m. if considered necessary. Groups are also invited, and will be eligible for medals, the same as at Westminster. These, however, must be entered by June 16th, and must be left for the second day of the show, when they may be removed at 7 p.m. The plants must be on the ground by 9.30 on June 27th, and the staging must be completed by 10.30 a.m. A special luncheon has been arranged, for which invitations will be issued to the Committees, &c.

This meeting is an interesting departure from the Society's routine, and, we hope, will be well supported. The local Show is always a good one, and with fine weather and in such surroundings the gathering ought to prove a great success.

The June meetings of the Manchester and North of England Orchid Society are fixed for the 7th, and 21st, at the Coal Exchange, Manchester. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock p.m.

A handsome form of Paphiopedilum × Carnusianum has just flowered in the collection of Reginald Young, Esq., of Sefton Park, Liverpool. The parents were fine forms of their respective species, P. × Haynaldianum ♀ and P. Spicerianum ♂, and the plant is further interesting as being derived from the very first cross made in the collection, about ten years ago—the actual dates were not recorded. The purple stripe in the dorsal sepal, and the spotting on its base and on the petals are particularly well marked.

A particularly fine spike of Odontoglossum crispum is sent from the collection of Mrs. John Holland, Wonham, Bampton, Devon. It measures over 2½ feet long, and bears seventeen flowers of excellent form and substance. It is further interesting on account of its bearing two perfect flowers from the same node and out of a single bract, which is probably the fully developed condition of what is known as a pair of fused flowers, of which also there is a good example on the raceme. This flower has eight segments, besides the two lips, and a double column. Had these also been

separate, it would have given eighteen flowers. It is a splendid example of good culture.

The handsome "Gold Medal" group of Vand teres, from the collection of Leopold de Rothschild, Esq., Gunnersbury Park, has been illustrated in the *Gardeners' Magazine* (1900, p. 298) and in the *Gardeners' Chronicle* (xxvii., p. 307, fig. 98).

CYMBIDIUM × I'ANSONI.

A MOST interesting Cymbidium has flowered with Messrs. Hugh Low and Co., Bush Hill Park, Enfield, out of their importations from Upper Burma. Until it flowered, it passed as C. Lowianum, but when this event occurred some striking differences were observed, and on comparison with allied species I have little doubt that it is a hybrid between C. Lowianum and C. Tracyanum. It bears a general resemblance to the former, but the sepals are much broader, the dorsal measuring 11 lines across, and the lateral 10 lines; the petals are also much broader, and all are distinctly lined with purple-brown, though paler than in C. Tracyanum. The lip is correspondingly enlarged, being decidedly broader and more obtuse, though the markings are arranged as in C. Lowianum, but much lighter in colour, while the crests are also broader, tinged with pink, and the pubescence longer. The column also measures 5½ lines broad, pubescent, tinged with pink, and spotted with crimson at the base. These differences are very striking when living flowers of the two are compared side by side, and are unmistakably modifications in the direction of C. Tracyanum, which also comes from the same region. It may be said that there are no red spots round the lip, but it is well known that certain characters of one particular parent are often missing in a hybrid from it. C. grandiflorum has been suggested as one parent, but that has also spots on the lip, and would fail to account for the lines in the sepals and petals, while C. giganteum would have reduced the size of the flower, and is otherwise different. This fine addition to the genus, which is dedicated to Mr. G. I'Anson, one of Messrs. Low's foremen, was exhibited at the recent Temple Show, and received an Award of Merit.

A suggestion was thrown out some time ago that C. Tracyanum is a natural hybrid between C. grandiflorum and C. giganteum, which seems to me improbable, for the flowers are as large as in the former, the lip remarkably similar to it, while its peculiar upright roots are not found in either of its supposed parents. It would be interesting to have these points cleared up by a few well-directed experiments.

R. A. R.

ORCHID PORTRAITS.

CATTLEYA CITRINA.—*Journ. Hort.*, 1900, xl., p. 432, fig. 115.

CATTLEYA × HARDYANA.—*Gard. Mag.*, 1900, p. 280, with fig.

CATTLEYA INTERMEDIA, FOWLER'S VAR.—*Journ. Hort.*, 1900, xl., p. 323, fig. 88.

DENDROBIUM AGGREGATUM.—*Garden*, 1900, lvii., p. 325, with fig.

DENDROBIUM × LEECHIANUM.—*Journ. Hort.*, 1900, xl., pp. 323, 325, fig. 89.

DENDROBIUM × VENUS.—*Sem. Hort.*, iv., pp. 233, 235, fig. 79.

MILTONIA VEXILLARIA MEMORIA G. D. OWEN.—*Gard. Chron.*, 1900, xxvii. (May 26, Suppl., p. 3), fig. 109.

ODONTOGLOSSUM × ADRIANÆ ARTHUR ASHWORTH.—*Gard. Mag.*, 1900, xl., p. 309, with fig.

ODONTOGLOSSUM CERVANTESII DECORUM.—*Journ. Hort.*, 1900, xl., p. 433, fig. 116.

ODONTOGLOSSUM CRISPUM AUREUM ROSEFIELDENSE.—*Journ. Hort.*, 1900, xl., p. 411, fig. 111. VAR. PITTIANUM.—*Gard. Mag.*, 1900, p. 296, with fig.; *Garden*, lvii., p. 355, with fig. VAR. THE EARL.—*Gard. Mag.*, 1900, p. 265, with fig.; *Journ. Hort.*, 1900, xl., p. 411, fig. 110. VAR. VICTORIA-REGINA.—*Journ. Hort.*, 1900, xl., p. 367, fig. 102.

ODONTOGLOSSUM × WENDLANDIANUM CRAWSHAYANUM.—*Gard. Chron.*, 1900, xxvii., p. 275, fig. 88.

PHAIUS × COOKSONIÆ.—*Journ. Hort.*, 1900, xl., pp. 323, 325, fig. 90.

SPATHOGLOTTIS × AUREO-VIEILLARDII.—*Journ. Hort.*, 1900, xl., p. 434, fig. 117.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily).

Dr. C. An exceptionally fine form of Sobralia macrantha.

R. c. D. Cypripedium Lawrenceanum giganteum and Lælia purpurta Lowiæ.

O. L. Very good forms of Cattleya Mossiæ and Lælia purpurata.

Capt. J. A very beautiful form of Cattleya Mossiæ, but we think it has already been named.

R. J. T. Odontoglossum × Cordinei and a peculiar form of O. × Wilckeanum.

C. C. H., R. Y., and others. Several matters are unavoidably postponed till next month, on account of pressure on our space.

Photographs received with thanks. G. S. B., G.I'A.

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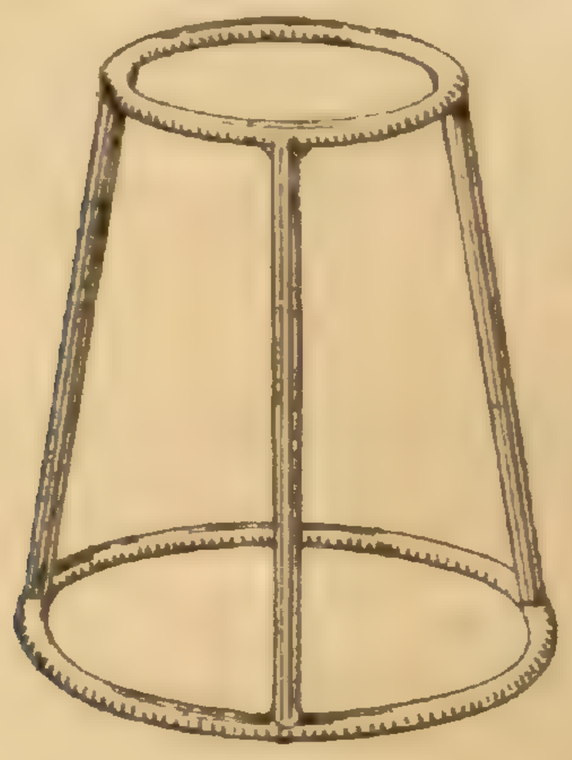

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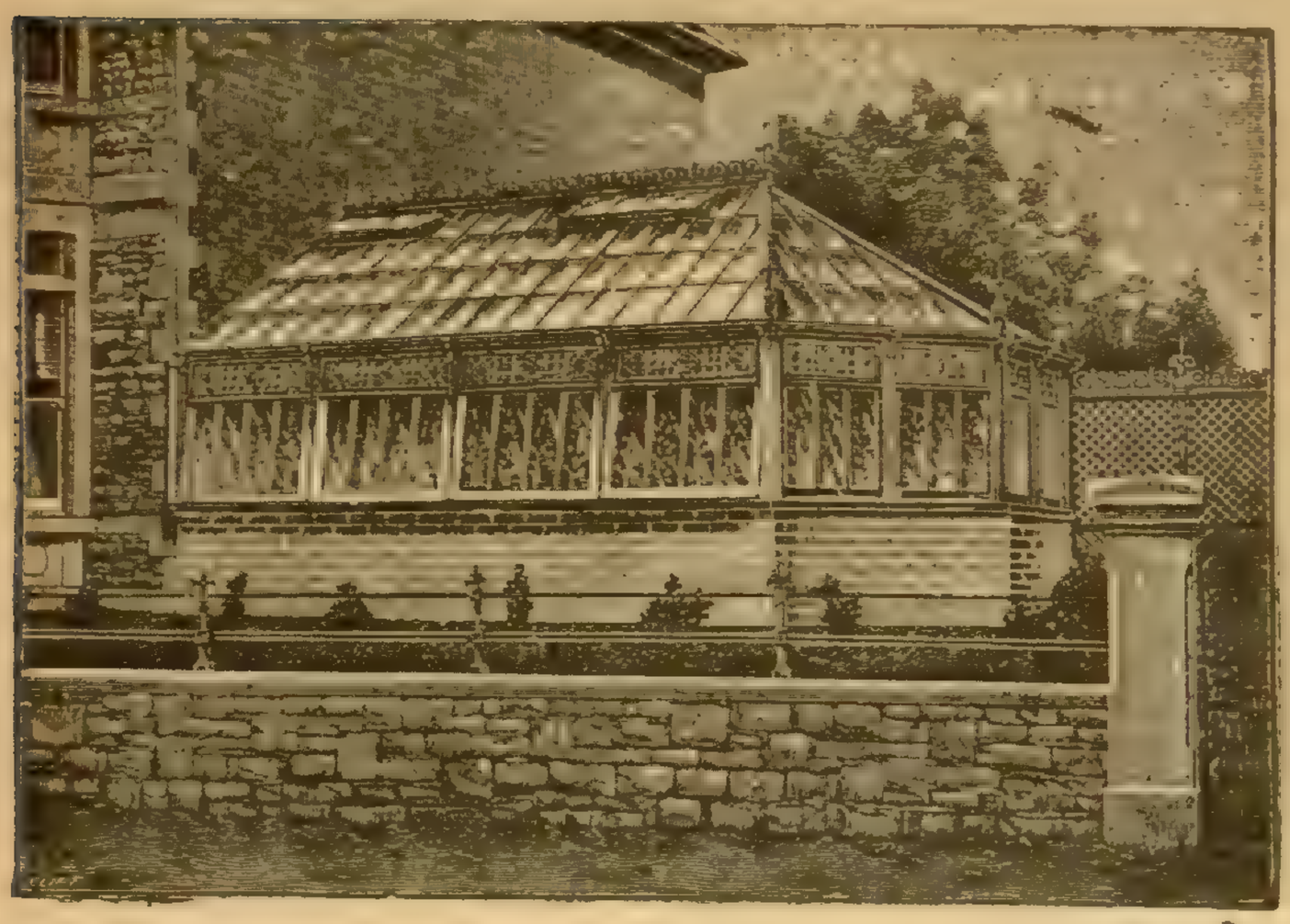

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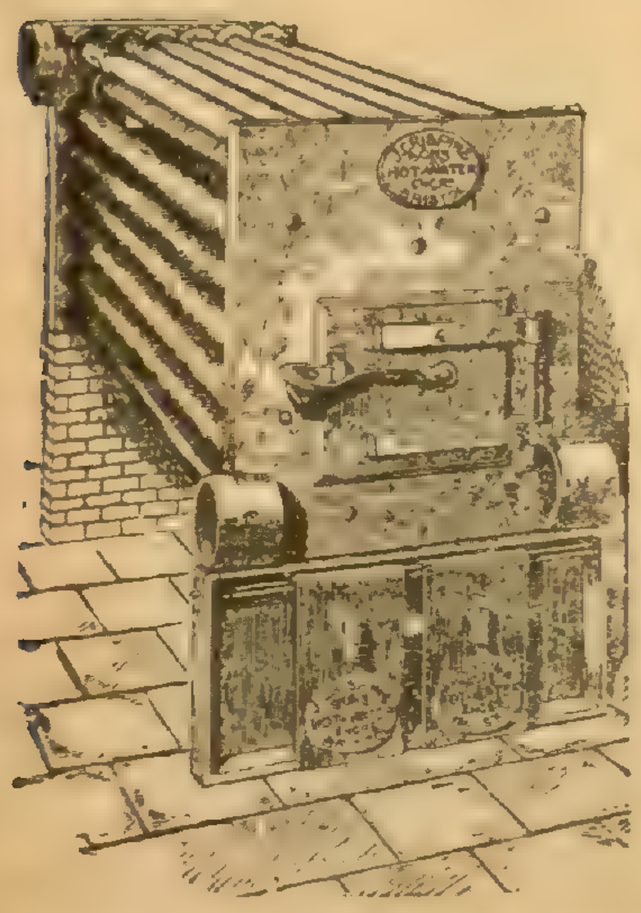

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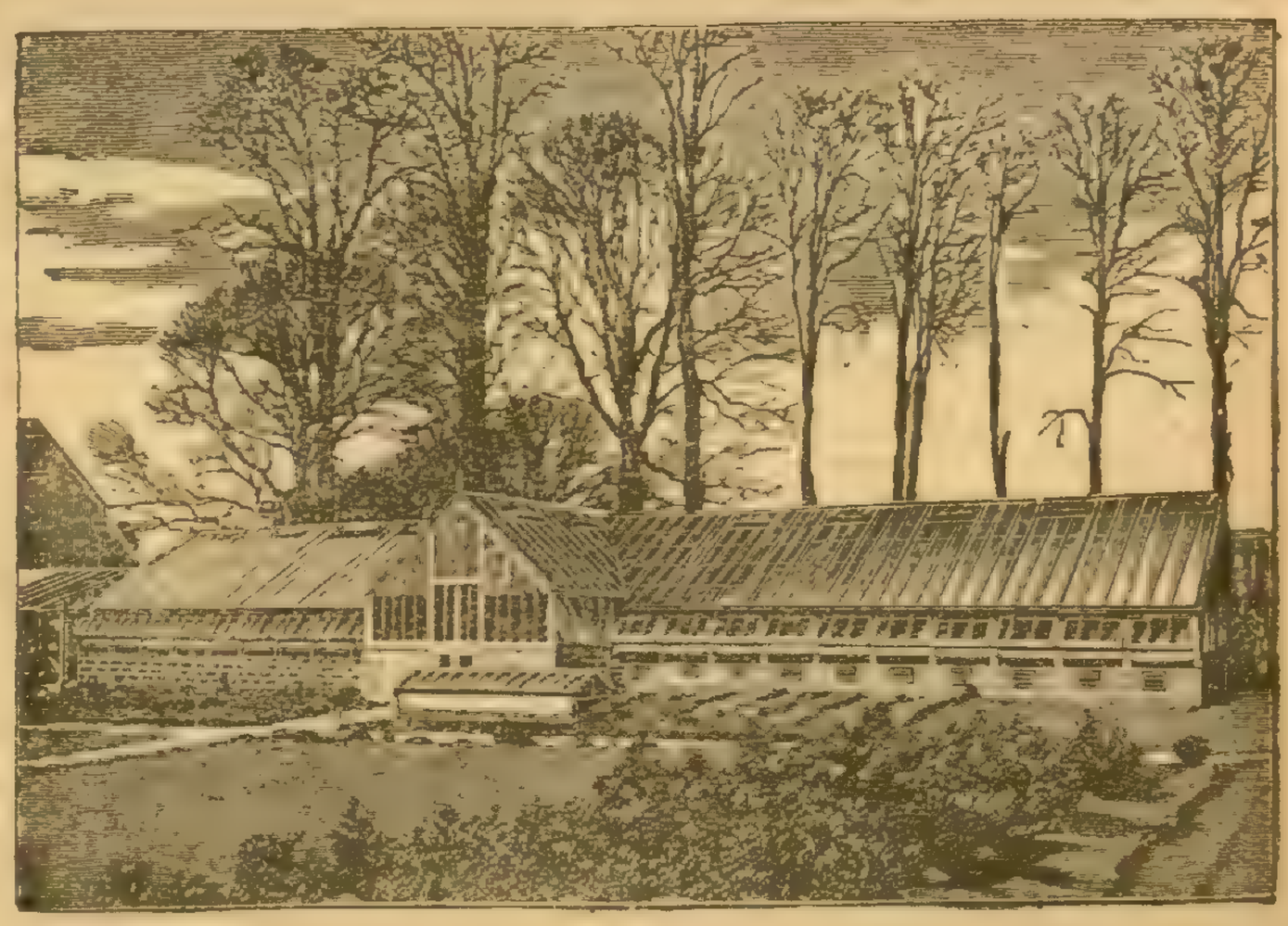

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DIES ORCHIDIANÆ.

MY remarks at page 97, on the Nomenclature of Varieties, have called forth two interesting contributions to the question, on which I must add a few words, though I am not very hopeful of being able to suggest any practical remedy for the growing confusion. The necessity for a system of registration seems to be admitted, but who will undertake it? Such a work would entail a considerable amount of time, trouble, and expense, to say nothing of the impossibility of obtaining examples of many pre-existing varieties, whose names, in some cases, are all that remain to us. And since my remarks appeared, many new varieties of Odontoglossum crispum alone have been recorded—in fact, the list is growing with prodigious strides, and one is tempted to ask how many distinct varieties are there of Odontoglossum crispum? Mr. Crawshay (page 139), seems to think that the number of "almost identical doubles" is "few," which is almost an admission that they are being named as individuals rather than as varieties. Registration on this principle would be rather a big affair.

"X" (page 139), approaches the question from a somewhat different and, to my mind, more hopeful standpoint. It seems to me that if all the multitudinous named forms of Odontoglossum crispum could be brought together, side by side, it would be found possible to range them under a smaller number of varieties, or types of variation, but how numerous these would be it is difficult to estimate. An arrangement of this kind would be both possible and useful, and could be undertaken quite apart from the question of nomenclature. Indeed, it would be much easier without it, if questions of priority have to be considered, though, of course, that point would have to be considered eventually. First ascertain your varieties, and then name them.

It may be argued that such a system of nomenclature is inadequate for "commercial purposes," and that specially fine forms would still require to be distinctively named. This point, however, we have long ago reached, and I may give as an example one of Mr. Crawshay's own names, O. c. aureum rosefieldiense (*O. R.*, viii., p. 170), the last word being what "X" would call an "extra-varietal formula." My own opinion on such additions is on record, but it might be modified if it were part of some well considered system, as I have just indicated, and only applied to recognized special forms.

The fact is that some of the names given are too long and clumsy for everyday use. First comes the genus, then the species, not always limited to a single word, then the variety, and, finally, an "extra-varietal formula," such as "Mr. J. W. Smith's variety," or "Sefton Park variety." Is it any wonder that "X" terms them "unnecessary"? The specific name alone may run to four or five words, for was not the most beautiful Odontoglossum which was exhibited at the last Temple Show named O. × Souvenir de Victor Hye-Lebrun? It is appalling to think that some day varieties, and even special forms of it may yet be named.

The mention of the Temple Show reminds me that I have not yet said anything about this gathering. The fact is there is very little new that can be said. All Temple Shows seem to be very much alike. One almost finds the same plants, and the same exhibitors, in the same old places, but in truth there is little room there for experiments in the way of rearrangment. In spite of this disadvantage, it is always a splendid Show, and this year the Orchids were fully up to the average, and, indeed, above it in some respects, for the plants were caught just at their best. The plant that struck me most in the way of novelty was M. Jules Hye's Odontoglossum mentioned in the preceding paragraph—I won't repeat the name. It is a splendid thing, and combines the best qualities of its parents, O. Harryanum and O. luteopurpureum. Eulophiella Peetersiana, though not strictly new, has not previously appeared at the Temple Show, and was the centre of much attraction. M. Peeters' new Lælio-cattleyas and M. Vuylsteke's Odontoglossums were also striking, and these exhibitors between them carried off no less than six of the awards.

A good many grumbles have been heard of late as to the lack of accommodation at the Drill Hall, but at all events the plants manage to find their way there. Before concluding my notes, I looked in at the last R. H. S. meeting at Richmond, and found the Orchid Committee present in pretty strong force, but where were the plants? At length I discovered them, four

in number—all very beautiful, I admit—and only one had failed to secure an award. There was a general air of got-no-work-to-do about the Committee, and yet in an adjoining tent there were three splendid groups, containing several subjects fully deserving of recognition, could they only have been adjudicated upon. I suppose they had not been entered, and therefore the Committee could not look at them. And yet, somehow, I thought it was to be a combined meeting with the local Horticultural Society, and had looked on it as a rather interesting experiment. True, it was a sort of extra meeting, but so far as Orchids were concerned it left something to be desired, and the next time such a meeting is held it would be advisable to alter the arrangements.

ARGUS.

A DENDROBIUM BEETLE, DIAXENES DENDROBII.

SOME time ago there seemed a possibility that this beetle would prove a great pest in Orchid collections, and we note with interest that its life-history has now been worked out by Dr. R. Stewart Macdougal, M.A., and is published in the recently issued *Notes from the Royal Botanic Garden, Edinburgh*, pp. 1-12, illustrated with two plates, showing the insect in its various stages and the mischief it does. In December, 1896, the author was asked to visit an Orchid House in Midlothian, where a number of plants had been ruined by some agency or other, and on cutting open some discoloured patches on the pseudobulbs he found the larvæ of a longicorn beetle in various stages. Some of these were removed to the Royal Botanic Garden, Edinburgh, and six adult beetles of Diaxenes Dendrobii were bred out in the following March. With these he proceeded to work out the life-history of the insect in one of the houses there. The infected Orchids were said to have come from Burma, and this was afterwards proved, for some plants of Dendrobium nobile, bought for the Royal Botanic Garden at a sale in London, were found to be affected, and from them the same beetle was bred. It may be mentioned that the beetles measure from 10 to 17 millimetres long, and are typically night feeders, of sluggish habit, resting by day at the base of the plant, or among the moss, but that, owing to protective colouring, they are very difficult to detect. The eggs are laid singly in the pseudobulbs, often at the apex, and hatch in about a fortnight, when the larvæ bore a tunnel down the bulb, and in time mine away all the soft parts. Almost any pseudobulbous Orchid seems to serve as food, for in the original infected house larvæ were taken from four specimens of Dendrobium, two species of Cattleya, and Lælia anceps, while the experiments were carried out on Lælia anceps, Cœlogyne cristata, C. flaccida, and Odontoglossum citrosmum, in each case the feeding larvæ quite ruining the plants. The perfect beetles are also very destructive, and live for a con-

siderable time. The complete cycle of development from egg to perfect insect can take place in rather under four months, but may take longer, and it seems probable that there are at least two broods in the year. The author concludes that the conditions of an Orchid house suit it perfectly, and that it is the very worst of Orchid pests, and yet with reasonable care successful war can be waged against it. Imported plants should be gone over, and any brown, discoloured parts should be removed. If the leaves are eaten, thus revealing the presence of the perfect insect in the house, they should be searched for after night-fall with a lantern, and destroyed. If the larvæ are at work in the pseudobulbs, a gradual discoloration will appear, and the grub must be cut out, or, if too far gone, the whole bulb should be removed. With a little perseverance in this treatment the pest should soon be eradicated.

Dr. Macdougal deserves the thanks of all Orchidists for the pains he has taken in working out the life-history of the insect, and it would be interesting to have the history of another Dendrobium beetle, Xyleborus perforans, traced in a similar way.

ODONTOGLOSSUM × WENDLANDIANUM.

Mr. J. O'Brien has made another suggestion as to the parentage of this puzzling plant. Writing on the question, he remarks:—"There seems to be little doubt that O. crispum Lehmanni is one of the parents, and on perusing a letter received from Consul F. C. Lehmann, in which he briefly describes a new Odontoglossum which he had found, which tallies closely with the characters of the plant illustrated in a recent issue of the *Gardeners' Chronicle*, I think it most probable that the O. × Wendlandianum would be derived from the O. crispum Lehmanni and the O. aspidorhinum, Lehm., which was sent to this country, together with other Odontoglossums, about the time he wrote. O. aspidorhinum has the spiny crest which formed the puzzling feature in O. × Wendlandianum, and is otherwise when crossed with O. C. Lehmanni a more likely combination than any other suggested. A strengthening circumstance in the argument is that Mr. McBean, of Cooksbridge, who flowered the variety illustrated, acquired many of the O. crispum Lehmanni, and other Odontoglossums sent over by Consul F. C. Lehmann, though, as is too often the case, he failed to label the plants, or keep them separate from others."—*Gard. Chron.*, 1900, xxvii., p. 290. I wish this presented us with a solution of the difficulty, but we have Consul Lehmann's own testimony that the two supposed parents grow in quite different localities. O. c. Lehmanni grows in dense woods near Santiago and Putamayo, on the Eastern Andes, in the Pasta district, at 5,800 to 7,400 feet altitude (*Engl. Jahrb.* xxvi.

p. 490), while O. aspidorhinum grows in dense forests on the eastern declivities of the Western Andes of the Cauca, at 7,100 to 8,100 feet altitude (*Gard. Chron.* 1895, xviii., p. 356). Besides the geographical difficulty, there is the further objection that the crest of O. aspidorhinum is totally different from that of O. × Wendlandianum, and cannot even be called spiny; in fact, the affinity of that species is with O. blandum and O. constrictum, not with O. crinitum. The crest of the hybrid is like that of O. crinitum with all the spines much reduced, as would inevitably occur in a cross between the latter and O. crispum. Whether the two grow together I cannot ascertain, for the habitat of O. crinitum is vaguely recorded as Eastern New Grenada, and I cannot find anything more definite on the subject. It is to be hoped that the matter may be cleared up before long, either by direct experiment or otherwise.

R. A. R.

EULOPHIELLA HAMELINII.

M. L. HAMELIN, Chateau d'Hautegente, Dordogne, has issued a Catalogue in which he offers for sale three species of Eulophiella, E. Elisabethæ, one called E. Hamelinii, and an unnamed one. The second is in reality the handsome E. Peetersiana, and the author remarks:—"This superb plant was introduced by me in 1893, and flowered for the first time in Europe with me in 1894. The flowers were sent to Professor Baillon, who described the plant under the name of Eulophiella Hamelinii." This name, however, so far as I can ascertain, has not been previously published, and, if so, it cannot supersede E. Peetersiana on the ground of priority, as the latter name dates from March, 1897. Professor Baillon, it may be noted, died on July 18th, 1895. The remaining species, marked as "Eulophiella nouveau," is said to have pure white sepals and petals, and the lip striped with vinous brown, and M. Hamelin remarks:—"It is, I think, the famous plant which Professor Reichenbach has published under the name of Cymbidium Loise Chauvieri, and which the naturalist Humblot considered as the Queen of Orchids." M. Hamelin, however, may not be aware that Cymbidium Loise Chauvieri is the so-called "scarlet Cymbidium," and probably identical with Eulophia Loise Chauvieri, which M. Humblot himself regards as none other than Eulophiella Elisabethæ. What, however, is of more immediate importance is that M. Hamelin has brought home life-sized, coloured drawings of his second and third species, made by a M. Trotter. That of E. Peetersiana—a plant which we now know—is sufficiently accurate in detail, and the sheet which contains that of the new species shows also a flowering branch of Vanilla Phalænopsis, of which,

after comparison with the figure in *Flore des Serres* (t. 1769-70), the same remark must be made.

It is only fair to infer that the artist has been equally successful with the other plant, and, if so, it is a very distinct and remarkable plant. It differs from both the others in having acuminate sepals and petals, and a branching raceme (the drawing shows five side branches and about thirty flowers). The lip is three-lobed and the obcordate front lobe is well spotted with red-brown, and bears three yellow keels at the base. In other respects it is most like E. Peetersiana in habit, though the leaves are narrower and the flowers smaller. Should the name E. Hamelinii not have been published prior to that of E. Peetersiana—as is believed—it is untenable for the latter, and I therefore propose to transfer it to the present novelty, as the only possible recognition of a name that will always be inseparable from the history of this remarkable genus. It is probable that a note by "A.E.P.G." of "another species which is supposed to be yet undetermined, bearing rather large white flowers" (*O. R.*, vii., p. 258), refers to the present one.

R. A. ROLFE.

ORCHIDS AT WALTON GRANGE.

THE Odontoglossums at Walton Grange, Stone, the residence of W. Thompson, Esq., are well known for their quality and cultural excellence, and a few notes respecting them which were made during a recent visit will doubtless prove interesting. A fuller account of the collection was given in our second volume (pp. 243-245), and it may be noted that since then a good many things have been disposed of, in order to give increased accommodation to the Odontoglossums, and a few other things which can be cultivated with them.

At the time of our visit there was a very fine display of bloom in which the forms of O. crispum, Pescatorei, triumphans, luteopurpureum, Rossii, Cervantesii, Hallii, polyxanthum, × Andersonianum, × Wilckeanum, × Coradinei, and others, were intermixed with some fine examples of Ada aurantiaca, Cochlioda Nœtzliana, Miltonia vexillaria, and Oncidium sarcodes, in a most effective manner. Among the forms more particularly noted we may first mention three or four examples of O. harvengtense, varying between themselves, which seems most allied to O. triumphans in general character, and may be a local form of the same. Two forms of O. × Andersonianum were very striking, one having very broad segments, but typical in other respects, and the other very richly marked on each segment. O. crispum was represented by many choice examples, and among them were O. c. Victoria-Regina and The Earl, which a few days later received

honours both in London and Manchester. O. c. Queen Victoria is now here, also O. × cirrho-Hallii, which was in bud. A plant of O. crispum had the inner halves of the lateral sepals deep yellow, and lip-like in character. O. Pescatorei, with purple spots on each sepal, was very good. We saw also the rare O. nævium, O. coronarium, O. cirrhosum, some good O. citrosmum in bud, and others which we must pass over. Suffice it to say that a perfect forest of spikes was pushing up in various stages.

Other interesting plants which we saw included Masdevallia caudata and Estradæ, the latter crowded with flowers, the beautiful Trichopilia suavis, Leptotes serrulata, and some splendid examples of Cochlioda Noetzliana. It is curious to note that for three years efforts have been made to obtain capsules of this plant, many crosses being tried, but without success. Two pods only formed, but these ultimately went off.

The health and vigour of the plants is remarkable and shows how completely the proper treatment has been mastered by Mr. Stevens. One fine plant of O. crispum had fifteen enormous bulbs, and was throwing up seven vigorous spikes, and there were many others approaching it. The large specimen of O. Hallii, which was exhibited at the last Quinquennial Show, is as good as ever. Another plant bore a spike having one side branch and twenty flowers. A plant of O. × excellens had a spike in bud with as many as thirteen side branches. The first plant of O. crispum which entered the collection thirty years ago was again pointed out, and was throwing up two fine spikes. Mr. Stevens now uses a compost of about half polypodium fibre and half leaf-mould, with a little moss and sand to keep it open, and only about an inch of crocks at the bottom of the pot. Plenty of bottom ventilation is given, but top ventilation only when necessary, and cold draughts are carefully guarded against. As regards winter temperature, Mr. Stevens remarked that he did not care to see the houses much below 50°, and if found so in the morning he would then turn on a little more heat. At that period the plants are gone over and watered about once a week. In hot weather the temperature is kept down as much as possible by judicious damping down, and at all times a genial moist atmosphere is provided. A few "wrinkles" of this kind from such a successful grower are valuable.

But the most interesting sight was the seedlings—about eighty nice little plants, in different stages and thriving condition. Some are from O. crispum and Harryanum, some from O. Uroskinneri and bictoniense album, but the parentage of others is a little doubtful. And hybrid seeds from O. crispum and Rossii, and from O. triumphans and Hallii, were both germinating. There were also plants of O. × Rolfeæ, of which one superb form has since flowered. We saw also some Cymbidium seedlings, and plants of Zygopetalum Mackayi × Chondrorhyncha Chestertoni, which should be interesting. The work of hybridising may be said to have only just begun,

but we saw a nice lot of fine capsules, of promising combinations, which promise much in the future. One of O. × Wilckeanum crossed with luteopurpureum Vulystekeanum, for example, might yield a fortune if all the plants could be grown. And the plant was again throwing up three fine spikes. Lælia Jongheana × Sophronitis grandiflora also promises much. We believe that hybridising Odontoglossums has a great future before it, and wish Mr. Thompson and his able gardener equal success in this department. The difficulty is chiefly cultural, and what they have mastered so thoroughly in the case of the older plants is likely to be repeated with the seedlings.

ORCHIDS IN SEASON.

SOME fine flowers of the handsome Cattleya Warscewiczii are sent from the collection of John W. Arkle, Esq., West Derby, Liverpool. They are out of a dozen plants purchased in the spring of last year, eight of which are flowering this season. Mr. Arkle finds a good deal of variation in individual plants, some blooming freely each year, while others will sometimes go years without flowering, and suggests that the most floriferous ones probably come from the Western Cordillera. A pretty marbled form of C. Mendelii and a good Epidendrum atropurpureum are also sent.

Two beautiful forms of Odontoglossum crispum are sent from the collection of Richard Ashworth, Esq., of Newchurch, Manchester, one having a large amount of rich red-brown blotching about the centre of each segment, and the other a large single blotch on each, light cinnamon in colour.

Another very pretty form of O. crispum is sent from the collection of D. W. Grimsdale, Esq., Kent Lodge, Uxbridge, in which the light red-brown blotches are limited to the sepals and lip, the petals being pure white, and contrasting very effectively.

Another fine dark form of L. purpurata is sent from the collection of R. le Doux, Esq., West Derby, Liverpool. The yellow in the throat is well defined, and lined with purple, hence it is referred to L. p. Lowiana.

Two flowers which are believed to be forms of O. × Denisonæ are sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, who remarks that some would perhaps consider them starry forms of O. crispum, because they are white with very little trace of spotting. Besides the O. luteopurpureum shape, however, the side teeth of the crest are well developed, and there can be little doubt that they belong to the same type as the original form above mentioned.

A very fine form of Sobralia macrantha is sent from the collection of Dr. Cranstoun, Broad Street, Ludlow. It is one of the best forms of the species.

DENDROBIUM TORTILE.

THE accompanying figure represents a good plant of Denrobium tortile, which has just flowered in the collection of John W. Arkle, Esq., Holly Mount, West Derby, Liverpool. It is a distinct and striking species, but for some reason it does not appear to be much grown, though Mr. Arkle remarks that it is "very pretty, lasts long, and seems to do well." It is a

FIG. 33. DENDROBIUM TORTILE.

native of Burma, and is found both in the Mergui district and in the Arracan hills, having originally been introduced from the former by Thomas Lobb, when collecting for Messrs. James Veitch & Sons, and described by Dr. Lindley, in 1847 (*Gard. Chron.*, 1847, p. 797, with fig.). Its nearest known ally is probably D. Hildebrandii, Rolfe, which has already been figured in these pages (vol. iii., p. 49), and which it much resembles in its

twisted sepals and petals, though in colour, shape of the lip, and other details the two are markedly different. The present one has pale rosy lilac sepals and petals, and a pale yellow lip, with a purple blotch at the base, from which some purple streaks radiate laterally. It is one of the parents of the beautiful hybrid D. × Niobe.

LÆLIA CINNABARINA AS A PARENT.

THE observations of Messrs. Rothwell and Young bearing on the impotency of Paphiopedilum Fairrieanum hybrids for crossing has opened up a very interesting line of investigation for the hybridist. A few notes on another phase of the same subject may be of interest to readers, relating to the use of Lælia cinnabarina as a parent. We have made in all thirteen trials, in three of which L. cinnabarina was the seed-bearer; in the other ten it was used as pollen parent. The point that seems worthy of note is that of the thirteen trials twelve were successful in greater or less degree; in those marked * the seed germinated so thickly that many were lost from surface fungus, that spread over the peat with great rapidity and fatal results, in hot, damp weather here in July and August of last year.

It will be seen that the experiments were varied, quite a number of distinct types being used, and the only one yet to be heard from is Lælio-cattleya × elegans, which has not been sown a month yet, though C. Percivaliana has been sown three weeks, and tiny green globes are already dotted over the surface of the seed-bed, and this last-named is not noted as a prolific parent.

LIST OF CROSSES MADE:—

Lælia	cinnabarina	×	L. purpurata		
,,	,,	×	Cattleya intermedia		
,,	,,	×	Epidendrum × O'Brienianum		
Cattleya	maxima	×	Lælia cinnabarina*		
,,	Mendelii Morganiæ	×	,,	,,	*
,,	Schrœderæ alba	×	,,	,,	*
,,	Bowringiana	×	,,	,,	
,,	Percivaliana	×	,,	,,	
,,	intermedia	×	,,	,,	
,,	labiata	×	,,	,,	*
Lælia	Perrinii	×	,,	,,	*
,,	purpurata	×	,,	,,	
Lælio-cattleya × elegans		×	,,	,, (not yet germinating)	

By way of off-set to the above, and, as it were, to prevent an attack of "capitus inflatus," we have had about forty spikes of Epidendrum radicans

(rhizophorum) in bloom this spring, and have made about fifty attempts to get a pod of seed set, failing in every instance, though all kinds of pollen available was used, and flowers of various stages of development, as well as different hours of the day and night, all with negative results. E. × O'Brienianum, however, will produce seeds readily, in two months, when crossed with Sophronitis, Cattleya, Lælia, or other Epidendrums. Can anyone tell why E. radicans is a failure as a seed bearer?

Epidendrums of the radicans section do finely here in full sun all the year—often over 100 degrees Fahr.—and flower freely when about three feet high. Shade is fatal to flower production and attenuates growth.

E. O. Orpet.

South Lancaster, Mass., U.S.A.

ERIAXIS RIGIDA.

In the concluding part of Reichenbach's *Xenia Orchidacea*, just issued, is a coloured plate and description of a remarkable Orchid from the island of New Caledonia, to which Dr. Kränzlin gives the name of Epistephium Regis Alberti (iii., p. 158, t. 291). The genus Epistephium has hitherto been considered as exclusively Tropical American, and the present plant has characters which clearly exclude it. But it is not a new plant, as supposed, having been described by Reichenbach as long ago as 1877, under the name of Eriaxis rigida (*Linnæa*, xli. p. 63). It was considered as forming a monotypic genus. Bentham, however, in the *Genera Plantarum*, reduced it to Galeola, though, in addition to some well marked floral differences, the presence of leaves at once stamps it as distinct, the species of Galeola being leafless saprophytes. The appearance of the present figure confirms Reichenbach's view that it is a distinct genus, for the densely tomentose pedicels and sepals, without a calyculus, as certainly exclude it from Epistephium. It is a striking plant with Epistephium-like leaves, and branched panicles of crimson flowers, with a deep yellow longitudinal crest composed of retrorse hairs, resembling those of Vanilla. As already remarked, the pedicels and back of the sepals are densely covered with a fulvous tomentum. It was collected many years in New Caledonia, by Vieillard (n. 1348 of his Herbarium) Pancher, and Deplanche, and in the adjacent Isle of Pines by Milne (n. 428), during the voyage of the *Herald*. The latter collector briefly noted it as "Table-land Orchid." The specimens now figured are indicated as collected by "Hodgson, 1887." It grows to three feet or more high, and would probably be difficult to introduce alive.

R. A. R.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.

THE usual Whitsuntide Show of this Society was held at the Botanical Gardens, Old Trafford, commencing on Saturday, June 2nd, and brought together a fine display of Orchids, which, in many respects, showed a marked improvement on the exhibits of last year.

For the best miscellaneous collection of Orchids, limited to Amateurs, the first prize was secured by E. Ashworth, Esq., Ashford, Wilmslow (gr. Mr. Holbrook), with a very fine group, in which the usual showy species of the season were well represented. It included some fine spotted varieties of Odontoglossum crispum, O. Pescatorei, some fine examples of Lælia purpurata, Cattleya Mossiæ, &c. T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), was second with another good group.

In the corresponding Nurserymen's class, Mr. J. Cypher, Cheltenham, staged a splendid group, which was most artistically arranged at the end of the large conservatory, and gained the First Prize, also a Gold Medal from the Council. His examples of Lælia purpurata were very fine; there were also large, well-bloomed examples of Dendrobium nobile, good forms of Cattleya Mossiæ, some fine examples of Odontoglossum crispum, O. × loochristiense, and most of the showy things of the season. Mr. John Robson was second with a well-arranged group having a frontage of forty-two feet, in which a fine example of Cattleya Mendelii bearing about twenty flowers was a prominent feature. Messrs. Heath and Son, Cheltenham, were third, with another good group.

For the best collection of Cattleyas and Lælias, the first prize was secured by Mr. Cypher, with good examples of Lælia purpurata, Cattleya Mendelii, and C. Mossiæ; the second prize going to Messrs. Heath & Son.

For ten specimen Orchids in flower, Mr. Cypher was again first, with fine examples of Dendrobium nobile, Miltonia vexillaria, and Lælia purpurata; and Messrs. Heath and Son were second.

In the non-competitive classes some excellent groups were exhibited. Messrs. John Cowan and Co., Gateacre, staged an excellent group, which, a correspondent informs us, was the best they have ever staged there, and to which a Gold Medal was awarded. Messrs. Charlesworth and Co., Bradford, and Messrs. Stanley, Ashton, and Co., Southgate, also each received a Gold Medal for fine groups of Orchids, and Messrs. Hugh Low and Co., Enfield, also received a Silver Medal for a good group.

A number of Certificates were also given. E. Ashworth, Esq., received First-class Certificates for Odontoglossum × Adrianæ Ernest Ashworth, O. × A. Arthur Ashworth, and Cattleya Skinneri Temple

var., and an Award of Merit for a fine dark form of Cypripedium Rothschildianum. Messrs. John Cowan and Co. received First-class Certificates for Cypripedium Lawrenceanum Hyeanum and Cœlogyne pandurata, an Award of Merit for Cattleya Mendelii Beauty of Ladysmith, and Cultural Certificates for Cattleya Mossiæ with over fifty flowers, and a well-grown Odontoglossum crispum. Messrs. Charlesworth and Co. received a First-class Certificate for a pretty, clear yellow form of Odontoglossum crispum, and Awards of Merit for O. c. Imperator, Cattleya Mossiæ magnifica, Cypripedium × Vipani, C. × Chapmanii heatonense, and Lycaste × Balliæ. Mr. J. Cypher received Awards of Merit for Cattleya Mossiæ Distinction and Lælia purpurata Queen Empress. Mr. John Robson received an Award of Merit for Cattleya Mossiæ fimbriata, and a Cultural Certificate for a beautiful plant of C. Mendelii with about twenty flowers. Messrs. Hugh Low and Co. received an Award of Merit for a pretty light form of Odontoglossum × Andersonianum.

Fred Hardy, Esq., Ashton-on-Mersey, showed, under a bell glass, a plant of the brilliant little Sophrocattleya × Hardyana.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of this Society was held on Tuesday, June 5th, the place of venue being the Botanical Gardens, Old Trafford, where the usual Whitsuntide Show of the Royal Botanical and Horticultural Society of Manchester was in progress, the result being a fine display of Orchids, including several good groups.

The members of the Committee present were:—Messrs. G. Shorland Ball (in the chair), Leemann, Law-Schofield, Gratrix, Baxter, Duckworth, Warburton, Parker, Cypher, Robson, Holmes, Johnson, and Weathers (Hon. Sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons) showed an exceedingly fine form of Odontoglossum × loochristiense, with dark yellow ground, heavily spotted and splashed with red, and the petals deeply serrated (F.C.), a very good form of O. × Wilckeanum (A.M.), a good O. × crispo-Harryanum (A.M.), O. crispum, Cypripedium callosum Sanderæ with a very large and well-formed flower, which has already been certificated by the Society, a very dark form of Dendrobium Victoria-Regina, and a fine specimen plant of Diacrium bicornutum carrying seven spikes (Cult. Cert.) The group received a Vote of Thanks.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a fine hybrid Cattleya (Mossiæ × Lawrenceana), C. Mossiæ Hardyana, C. M. Wageneri, C. M. alba, Lælio-cattleya × Eudora alba (F.C.), L.-c. × Edouard André

(A.M.), L.-c. Martinetii (A.M.), Lælia Digbyana (A.M.), Cypripedium × Helvetia (Chamberlainianum × philippinense) (A.M.), and a good form of Odontoglossum crispum. This exhibitor staged a remarkably fine group containing the above and numerous other select and well-flowered varieties, for which he was awarded a Silver-gilt Medal.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), showed Lælio-cattleya Edouard André (A.M.).

Samuel Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Cattleya Mossiæ Prince of Wales, C. M. Victoria, a very distinct and pretty variety (F.C.), C. M. West Point variety, C. Mendelii Colonel Plumer (A.M.), C. M. West Point variety, Lælia purpurata nobilior (A.M.), L. p. illustris, a very fine dark variety (F.C.), and Cypripedium Lawrenceanum Gratrixianum, which has already received an A.M. from the Society. A Vote of Thanks was awarded for the group.

Mrs. Gratrix showed a very pretty form of Cattleya Mossiæ named Lord Roberts.

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Cypripedium × Harrisianum superbum, Odontoglossum Hallii Baxteri, a very distinct form, O. triumphans Golden Queen, O. t. Colonel Mahon, and Odontoglossum crispum Etna. This exhibitor staged a very effective group of miscellaneous Orchids, for which he was awarded a Silver Medal.

T. Statter, Esq., Stand Hall (gr. Mr. Johnson), showed Lælio-cattleya × Eudora (A.M.), and Cattleya Mossiæ Reineckeana.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), showed Cypripedium callosum Sanderæ (F.C.), C. bellatulum rubrum, Cattleya Mossiæ Bridge Hall variety, and Dendrobium Bensonæ superbum. This exhibitor also staged a very good group, for which he received a Silver Medal.

A. Warburton, Esq., Haslingden (gr. Mr. Lofthouse), showed the pretty Odontoglossum crispum Luciani (F.C.), Cypripedium callosum Sanderæ (F.C.), Lælia purpurata fastuosa (A.M.), and Cattleya Mossiæ Princess of Wales (A.M.). A Vote of Thanks was awarded for the group.

E. H. Seddon, Esq., Brooklands (gr. Mr. Milne), staged a good group, for which he was awarded a Silver Medal, and amongst which were Cattleya Mossiæ Reineckeana, C. M. Brilliancy, C. M. albescens, C. M. aurea (A.M.), Odontoglossum crispum, and O. Pescatorei.

Richard Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed Cattleya Mendelii Ajax, C. Mossiæ delicata, C. M. Reineckeana, Lælia Boothiana, Sobralia macrantha Kienastiana (F.C.), Odontoglossum crispum Ellisianum (A.M.), O. triumphans Leonidas, a very beautiful form (F.C.), and Cœlogyne Dayana. This exhibitor also staged a very effective group, for which he received a Silver Medal.

Mr. J. Cypher, Cheltenham, showed Lælia purpurata Lady Roberts (A.M.), Cattleya Warneri, a very good form, Cattleya Mossiæ Distinction (A.M.), Thunia Bensonæ superba (A.M.), and Odontoglossum crispum.

Messrs. F. Sander and Co. St. Albans, staged a remarkably select group, for which they received a Silver Medal, and amongst which were the beautiful Miltonia vexillaria British Queen (A.M.), a very fine spotted Odontoglossum crispum Federation (A.M.), O. c. Rt. Hon. J. Chamberlain (A.M.), and O. × Andersonianum Reine d'Or.

M. Peeters, Brussels, showed Lælio-cattleya × Massangeana (A.M.), L.-c. × Herode (A.M.), L.-c. elegans maxima, an exceedingly fine form (A.M.), Cattleya Mossiæ cœrulea (A.M.), Cypripedium Lawrenceanum × Rothschildianum (A.M.), Odontoglossum crispum, and a very fine specimen of Eulophiella Peetersiana (F.C.). A Vote of Thanks was awarded to the group.

Messrs. Hugh Low and Co., Enfield, showed Cattleya Mossiæ bellissima (A.M.), C. M. E. Ashworth, and C. M. Excellent (A.M.).

Messrs. Stanley, Ashton and Co., Southgate, showed Cattleya Mossiæ Harold.

Messrs. John Cowan and Co., Gateacre, showed Odontoglossum crispum Sir George White, O. c. giganteum, Cattleya Mossiæ Beauty of Mafeking and Beauty of Ladysmith, C. Mendelii Lord Kitchener (A. M.), C. M. Sir Alfred Milner (A.M.), C. M. delicata, Cypripedium Lawrenceanum Hyeanum, with very small flower, and three plants of Miltonia vexillaria. The group received a Vote of Thanks.

Mr. W. Holmes, Timperley, showed Lælio-cattleya × Hermann Holmes (L. purpurata × C. Schilleriana).

Mr. John Robson, Altrincham, showed Cypripedium × Gowerianum × Rothschildianum (A.M.).

Mr. Keeling, Bingley, staged a good miscellaneous group, for which he received a Silver Medal, and amongst which were Cattleya Mossiæ elegans, C. M. Wyattiana, and Lælio-cattleya × Hippolyta aurantiaca (A.M.).

At the meeting held on June 21st, at the Coal Exchange, Manchester, there was again a very good display, and the following members of the Committee were present:—Messrs. G. Shorland Ball (in the Chair), Leemann, Hodgkinson, Thompson, R. Ashworth, Parker, Cypher, Robson, Stevens, and Weathers (Hon. Sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed the beautiful and extraordinary Stanhopea bucephalus (F.C.).

John Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed Cattleya Mossiæ grandiflora (A.M.), C. M. grandis (A.M.), C. × calummata (A.M.), Cypripedium × Gowerianum superbum (F.C.), Lælio-cattleya × Martinetii, L.-c. × Arnoldiana, and Odontoglossum × Coradinei (A.M.). This

exhibitor staged a very fine group, consisting of the above and many other fine and interesting Orchids, to which a Silver-gilt Medal was awarded.

W. Thompson, Esq., Stone (gr. Mr. Stevens), showed a magnificent group of Odontoglossums, for which he was awarded a Silver-gilt Medal, and amongst which were many superbly grown specimens, to three of which Cultural Certificates were granted. The following awards were also made: O. × Rolfeæ, Walton Grange variety (Harryanum × Pescatorei), an exceedingly fine flower, cream white, richly blotched with bright purple (F.C.), O. × Wilckeanum grande (F.C.), and O. crispum Trianæ (A.M.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed a nice group, for which a Vote of Thanks was awarded, and amongst which we noticed a good Odontoglossum × Wilckeanum.

Samuel Gratrix, Esq., Whalley Range (gr. Mr. McLeod), showed Cattleya Mendelii Amelia, a very pretty form, Lælio-cattleya × Lady Wigan, and Cypripedium × Gertrude Hollington magnificum, an exceedingly fine form of this beautiful hybrid (A.M.).

O. O. Wrigley, Esq., Bridge Hall (gr. Mr. Rogers), showed Lælia majalis (A.M.), and Cattleya Mendelii, Wrigley's variety.

J. Williamson, Esq., Stretford (gr. Mr. Patten), showed Epidendrum species, and Cypripedium bellatulum.

E. H. Seddon, Esq., Brooklands, showed Cattleya Mossiæ magnifica (A.M.).

A. G. Lees, Esq., Stretford (gr. Mr. Jones), showed Cattleya Mendelii Mrs. A. G. Lees, a very beautiful white form with the slightest suspicion of pink in the labellum (F.C.), and a good form of C. Schilleriana.

W. Watson, Esq., Stretford (gr. Mr. Jones), showed a nice group of miscellaneous Orchids, to which a Silver Medal was awarded.

Messrs. J. Veitch & Sons, Chelsea, showed Odontoglossum crispum Silver Queen.

Mr. John Robson, Altrincham, showed Lælio-cattleya × Dominiana Fire King.

Messrs. John Cowan & Co., Gateacre, showed Odontoglossum Rossendale, a large flower of excellent shape, and blotched with large, reddish brown (F.C.), O. crispum The Bride (A.M.), Lælio-cattleya eximia (A.M.), and Spathoglottis × aureo-Viellardii (A.M.).

Mr. A. J. Keeling, Cottingley, showed Cypripedium × villoso-bellum, C. × Phœbe, C. bellatulum album, Dendrobium × Venus (A.M.), Lælia purpurata, L. tenebrosa, and L. cinnabarina.

Mr. J. Cypher, Cheltenham, staged a small group, for which a Vote of Thanks was awarded.

Messrs. F. Sander & Co., St. Albans, also showed a miscellaneous group, and were awarded a Vote of Thanks.

CYMBIDIUM × I'ANSONI.

We are now able to give a figure of the handsome natural hybrid, Cymbidium × I'Ansoni, which was described at page 191 of our last issue. The photograph was taken by Mr. G. I'Anson, and shows both the resemblance to C. Lowianum, and the modified characters previously pointed out, including the distinct veining in the sepals and petals, which is believed to have been derived from C. Tracyanum. There is little further to add respecting it, but we may express the hope that someone will

Fig. 34. Cymbidium × I'Ansoni.

attempt to obtain it artificially. Cymbidiums are so easily raised from seed, and both the parents are so deservedly popular, that there is every inducement for the experiment to be made, if anyone is fortunate enough to have the two in flower together. It might well be that from a good batch of seedlings some more distinct forms would be obtained, as hybrids from the same capsule often show a considerable amount of variation.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

A MEETING of the Royal Horticultural Society was held at the Drill Hall, James Street, Westminster, on Whit Tuesday, June 5th, when a number of interesting Orchids were staged, though both exhibitors and visitors were fewer than usual, and the former were almost entirely limited to amateurs. The members of the Orchid Committee present were: H. J. Veitch, Esq. (in the chair), H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, E. Hill, H. Little, H. T. Pitt, J. W. Potter, F. Sander, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (hon. sec.).

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young) staged a most excellent group, both as to quality and culture, which gained a Silver Flora Medal. It contained a fine series of the Cattleya group, including two examples of C. Warneri—one with twelve flowers, C. Mossiæ with about twice as many, a good C. M. Reineckeana, some good C. Mendelii, C. × Prince of Wales, Lælia tenebrosa with nine flowers, L. Digbyana, and a dark L. purpurata, four good Lælio-cattleya × eximia, Thunia Marshalliana and alba, Aërides Fieldingii, some good Phalænopsis amabilis, P. speciosa Imperatrix, and others, Dendrobium Farmeri, D. × chlorostele Owenianum, some good Odontoglossum crispum, a form of Cypripedium × Kerchoveanum called W. H. Young, and other fine species, also a nice little plant of Eria extinctoria bearing ten flowers. An Award of Merit was given to Cypripedium × Godefroyæ, Wigan's var., a large, white, slightly-spotted form, and Botanical Certificates to the four following: Phalænopsis Mannii, P. fuscata, Brassia maculata, and Dendrobium stuposum.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), also staged a fine group, to which a Silver Banksian Medal was given. It contained some good Odontoglossums, among which O. × excellens, Rosslyn var., was conspicuous, the spike terminating with a pair of confluent flowers, Miltonia Roezlii, and some good M. vexillaria, some good Cattleyas, Lælia Digbyana, tenebrosa, and purpurata, Dendrobium Dearei, Promenæa xanthina, two good Pescatorea Klabochorum, Zygopetalum Burtii, and other showy species.

Sir Trevor Lawrence, Bart., Burtord, Dorking (gr. Mr. White), showed a remarkable hybrid derived from D. pulchellum (Dalhouseanum) ♀ and D. nobile ♂, called D. × Dalhou-nobile, to which an Award of Merit was given. The flower was large, approaching the seed parent in shape, but more like D. nobile in colour: the growth also most resembled the former. It was raised in the collection of R. Brooman White, Esq.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent Odontoglossum × elegantius, O. crispum Cecile de Rochfort, O. × Andersonianum candidum, and O. citrosmum rosefieldiense.

W. A. Gillett, Esq., Fairoak Lodge, Eastleigh (gr. Mr. Carr), sent a spike of a large form of Odontoglossum crispum.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, sent the pretty Saccolabium ampullaceum, bearing six spikes, and a singular form of Miltonia vexillaria with the petals somewhat lip-like in colour.

Sir J. Miller, Bart., Manderston, Duns, N.B. (gr. Mr. Hamilton), sent Lælio-cattleya × Lady Miller and L.-c. × Martinetii.

A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Humphreys), sent some good flowers of Cattleya Mendelii and C. Mossiæ.

Mr. E. Kromer, Roraima Nursery, Croydon, sent the pretty little Brazilian Oncidium nanum, which received a Botanical Certificate.

Mr. J. Douglas, Great Bookham, showed Cattleya Warneri, C. Mossiæ, and C. Mendelii albens.

Mr. H. A. Tracy, Twickenham, sent the striking Brassia longissima and Cattleya Mossiæ.

At the meeting held on June 19th Orchids were again very well represented, and no less than nine medals were awarded, against a single certificate of each of the four grades offered by the Society.

The Orchid Committee was represented as follows: H. J. Veitch, Esq. (in the chair), and Messrs. H. Ballantine, T. W. Bond, H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, J. G. Fowler, J. T. Gabriel, E. Hill, J. Jaques, H. Little, H. T. Pitt, T. Rochford, F. J. Thorne, H. A. Tracy, W. H. White, W. H. Young, J. O'Brien (hon. sec.), and, as a visitor, A. Truffaut, of Versailles.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a select group, to which a Silver Flora Medal was given. It included a fine Lælio-cattleya × Arnoldiana, L.-c. × Canhamiana Edouard André, Lælia tenebrosa, Walton Grange variety, two fine Odontoglossum crispum, Cattleya Mossiæ Lawrenciæ, Masdevallia × Gairiana, Physosiphon Loddigesii, Tainia speciosa, Polystachya zambesiaca, Habenaria militaris, Arethusa sinensis (Rolfe), Luisia Amesiana, and other interesting things.

Baron Sir H. Schröder, The Dell, Staines (gr. Mr. Ballantine), also received a Silver Flora Medal for a choice little group, including Lælio-cattleya × Hippolyta, L.-c. × eximia, L.-c. × Lady Wigan, the fine Odontoglossum crispum Rex, O. c. xanthotes, Cypripedium callosum Sanderæ, and other good things.

F. A. Bevan, Esq., Trent Park, New Barnet (gr. Mr. Ward) received a Silver Flora Medal for a splendid specimen of Cœlogyne Dayana, bearing about fifty of its graceful racemes, and an aggregate of over two thousand flowers.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), also

staged a fine group, which gained a Silver Flora Medal. It contained fine plants of Cypripedium Lawrenceanum Hyeanum, C. callosum Sanderæ, six fine examples of Cattleya Warscewiczii, C. Eldorado splendens, a good Lælio-cattleya × Aphrodite, and the brilliant Cochlioda Noetzliana.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), received a Silver Flora Medal for a fine group, containing some good Odontoglossum crispum, O. Hallii, O. × Wilckeanum, O. citrosmum, two well-flowered plants of Lælia Digbyana, some good L. tenebrosa, Thunia Bensonæ and Marshalliana, Galeandra Devoniana, Anguloa Clowesii, Cochlioda Noetzliana, Platyclinis filiformis, Cattleya Mendelii, Warscewiczii, &c.

H. F. Simonds, Woodthorpe, Beckenham (gr. Mr. Day), also received a Silver Flora Medal for a good group, containing some good plants of Lælia purpurata, Cattleya Mossiæ, C. Mendelii, C. intermedia, C. Schilleriana with nine flowers, some good Odontoglossum Hallii, and others, Dendrobiums, &c.

J. Colman, Esq., Gatton Park (gr. Mr. Bound), received a Silver Banksian Medal for a good group, including a richly-coloured Cattleya Mossiæ, three C. M. Reineckeana, some good Odontoglossum crispum, Oncidium olivaceum Lawrenceanum, O. monachicum, &c.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), staged the handsome Odontoglossum × Rolfeæ, Walton Grange variety, to which a First-class Certificate was given. It is described on another page.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent two forms of Phalænopsis speciosa, a very fine P. amabilis, and Sobralia × Veitchii aurea, the latter receiving an Award of Merit.

A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Humphreys), received a Botanical Certificate for Eulophia gracilis.

W. P. Burkinshaw, Esq., Hessle, Hull (gr. Mr. Barker), sent Cattleya Mendelii Maudeæ, a fine white, with rose markings on the lip.

D. M. Grimsdale, Esq., Uxbridge (gr. Mr. Hooker), sent cut examples of Odontoglossum crispum, O. × Coradinei, and Dendrobium Devonianum.

J. B. Joel, Esq., Northaw House (gr. Mr. May), showed a fine plant of Cattleya Warscewiczii imperialis.

Sir J. Miller, Bart., Manderston, Duns, N.B. (gr. Mr. Hamilton), sent Lælia × Eveline (tenebrosa × præstans), having rosy lilac flowers with some narrow markings on the lip.

J. S. Moss, Esq., Bishops Waltham, showed a spike of Odontoglossum Wilckeanum Mossiæ.

R. W. Rickards, Esq., The Priory, Usk, showed a good form of Odontoglossum crispum with orange blotches on the lip.

Messrs. Stanley, Ashton & Co., Southgate, staged a pretty group of Odontoglossums, Cattleyas, and other showy Orchids, which received a

Silver Banksian Medal. A splendid plant of Cattleya Mossiæ, bearing about forty flowers, received a Cultural Commendation, and Oncidium flexuosum unicolor, with clear, yellow unspotted flowers, was also noteworthy.

Messrs. Hugh Low & Co., Bush Hill Park, also received a Silver Banksian Medal for a good group, containing some good Cattleyas, Odontoglossums, Lælia tenebrosa, Epidendrum vitellinum, and other showy species of the season. O. crispum Model was a remarkable form, somewhat resembling O. c. Oakfield Sunrise in shape, but with a few brown spots on the petals instead of a ruby red blotch.

Messrs. Charlesworth and Co., Bradford, showed Cypripedium × Chapmanii heatonense, a very handsome form, and a fine plant of the pure white Dendrobium Phalænopsis hololeucum.

M. Florent Claes, Brussels, staged a nice group of Odontoglossum × Adrianæ and O. crispum forms, among which was a large, cream-white form prettily blotched with brown, called O. c. Madame Claes.

Messrs. Heath and Son, Cheltenham, sent a good Lælia Digbyana.

Mr. James Douglas, Great Bookham, sent a plant of Dendrobium tortile.

Messrs. B. S. Williams and Son, Upper Holloway, staged a pretty little group, including a good plant of Vanda suavis, V. teres and a white petalled form, Lælia tenebrosa, Geodorum candidum, and some good Cypriped iums.

MEETING AT RICHMOND.

On June 27th and 28th a meeting was held at the Old Deer Park, Richmond, in conjunction with the annual Show of the Richmond Horticultural Society. A special tent was set apart for the Society's exhibits, which was well filled with a variety of subjects, though only four Orchids put in an appearance. The Orchid Committee, however, mustered strongly, and included H. J. Veitch, Esq., in the chair, and Messrs. T. W. Bond, H. J. Chapman, W. Cobb, De B. Crawshay, E. Hill, A. Hislop, H. Little, H. T. Pitt, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (Hon. Sec.).

Mr. Briggs-Bury, Accrington, sent two beautiful forms of Odontoglossum crispum, which obtained recognition. O. c. Duchess of Connaught has broad, slightly incurved, much spotted segments, tinged with rose, and a very broad lip, with many small dots near the margin (First-class Certificate), and O. c. Empress of India has the segments flat, slightly tinged with light purple, and bearing clusters of red-brown blotches (Award of Merit).

Mr. H. A. Tracy, Twickenham, sent Cattleya Mendelii La Belle, a beautiful form with pink petals and a richly-coloured lip, and C. M. albens Princess of Wales, with blush-white flowers, the latter receiving a First-class Certificate.

RICHMOND HORTICULTURAL SOCIETY.

THE Annual Show of this Society in the Old Deer Park was on this occasion extended over two days—June 27th and 28th—and held in conjunction with a meeting of the R.H.S., as already pointed out, and brought together a fine lot of showy Orchids.

Prizes were offered for the best six specimen Orchids, and H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), was first, his group containing a very fine example of Vanda teres bearing about two dozen racemes, a good V. tricolor, a fine Cattleya Mendelii with six racemes and eighteen flowers, Lælia purpurata, L. tenebrosa and Thunia Marshalliana. Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), was adjudged second, with a superb example of Phalænopsis amabilis bearing two racemes, Cypripedium Lawrenceanum with sixteen flowers, a fine Cattleya Warscewiczii, Lælia tenebrosa with seven racemes, a well-flowered clump of Epidendrum vitellinum, and E. prismatocarpum with six racemes.

Three very fine groups were staged, not for competition, and to each a Silver-gilt Medal was awarded.

The group exhibited by Sir Frederick Wigan was superb, having a frontage of about eighteen feet, and contained many choice things. Among the more noteworthy were Lælio-cattleya × Wiganiæ (L.-c. × Gottoiana × C. Mossiæ), in which shades of purple predominated, and var. aurea, a lighter form with buff sepals; L.-c. × Canhamiana marginata bearing two racemes and seven flowers, with a broad white margin round the richly-coloured lip; L.-c. × Henry Greenwood superba, a splendid form; L.-c. × Aphrodite, Clare Lawn var., equally handsome; the rare Cattleya Schrœderæ, C. Forbesii, C. Gaskelliana albescens, C. Warneri, C. × Grayæ (granulosa × velutina), quite intermediate in character; Lælia Digbyana, two plants of L. majalis, several L. tenebrosa; fine examples of Sobralia macrantha, S. m. Kienastiana, and S. × Veitchii aurea, Aërides crassifolium, a noble specimen of Cœlogyne aspersa bearing three racemes, Epidendrum Medusæ, Dendrobium Dearei, Cypripedium × orphanum, Epidendrum atro-purpureum, Odontoglossums, Masdevallias, Angræcum falcatum, and other interesting things.

H. Little, Esq., also staged a very fine group, of some fifteen feet frontage, containing some fine specimens of Cymbidium Lowianum, Oncidium Marshallianum, varicosum, and Gardneri, some brilliant Cattleyas and Lælias, one form of L. tenebrosa being very bright in colour, some nice pieces of Odontoglossum citrosmum and others, Lælio-cattleya × Wiganiæ with marbled sepals and petals, the rare Maxillaria Houtteana with about ten flowers, some good Cypripediums, &c.

Messrs. Hugh Low and Co., Enfield, staged a very pretty group opposite

the entrance to the tent, which contained the handsome Vanda Hookeriana with a raceme of three flowers, V. × Miss Joaquim, Lælia Digbyana and tenebrosa, Epidendrum prismatocarpum and vitellinum, Oncidium ampliatum, the charming little Cypripedium × Vipani, Lælio-cattleya × Schilleriana, Odontoglossum Pescatorei, some brilliant Cattleyas, and other showy species of the season.

GERMINATION OF ORCHID SEEDLINGS.

An interesting paper, by M. Noël Bernard, "On some difficult cases of germination," appeared in the March number of the *Revue Générale de Botanique* (xii., pp. 108-120), in which a cause is suggested for some of the well-known difficulties found in germinating seeds of Orchids. The author points out that the presence of endophytic fungi in the roots and rhizomes of Orchids is now a well-known fact, Wahrlich, in 1886, having found them to be present in no fewer than five hundred exotic species of various groups, and that the phenomenon is believed to be general.

These fungi, which belong to different species of Nectria and Fusarium, are found in the subterranean parts of the plant, not being found in the stems, flowers, fruits, or seeds. They live within the tissues of the Orchid, at the same time assisting the latter in obtaining its food, and thus it is a case of symbiosis, or the two living together for their mutual benefit. The author shows that these fungi are present in the very youngest seedlings, and considers that their presence stimulates the seed to germinate when placed under suitable conditions of heat and moisture. Infection must take place very early, as the author found, from direct anatomical observations, that they were already present in germinating seedlings of Neottia nidus-avis and a hybrid Lælia, while still enclosed within the untorn integument of the seed.

The seed of an Orchid consists of an undifferentiated ovoid or globular pro-embryo, covered with a dead skin, or testa, usually fusiform in shape and with reticulated surface. The fungi are thus described :—In a section of the youngest plantlet one sees in the infested cells a very distinct knot of mycelial filaments. In older specimens the filaments are less and less distinguishable, until the knot finishes by being reduced to a great, brown mass adherent to the nucleus. This brown matter has often been observed, but the endophytic character of the fungus which originated it was not recognized.

M. Bernard alludes to the common horticultural practice of sowing the seed upon the compost of a pot in which a living plant of the same species is grown, and to an opinion that such a living plant serves to "purify" the soil, as it has been observed that the germination does not

succeed upon a substratum, identical in composition, which has not contained a living plant of the same species. The author, however, would offer the reverse explanation, namely, that the living plant "infects" the substratum with the fungus, without which germination cannot be effected. As to the well-known fact that the germination of Orchid seed is "capricious," taking place after various periods of delay, M. Bernard suggests that this may be due to the seed not having been all infected by the mycelium together.

This is necessarily a very brief summary of the argument, and without in any way questioning the presence of the fungi, or their use to the plant, we cannot wholly adopt the inferences drawn by M. Bernard. We know of Orchid seeds which have germinated upon various strata specially prepared for the purpose, which contained no living plant, and from which they have been "pricked off" and grown on in the usual way. Whether the fungi were accidentally present in the compost we cannot say. If the fungi are not present in the seeds before sowing—and M. Bernard examined a seed of Neottia nidus-avis anatomically with negative results—but are found in the youngest plantlets while still enclosed within the untorn integument of the seed, the question arises, how did they effect an entrance? Further experiments are desirable to clear up this point. Meantime, it would be interesting to hear the opinions of others on some of the points raised.

ODONTOGLOSSUM × ROLFEÆ, WALTON GRANGE VAR.

A FLOWER of the beautiful Odontoglossum × Rolfeæ, Walton Grange variety, to which a First-class Certificate was given by the Royal Horticultural Society on June 19th, and a similar Award by the Manchester and North of England Orchid Society two days later, has been sent from the collection of W. Thompson, Esq., Walton Grange, Stone. It is remarkably distinct from the original form, and approaches one described at page 163 of our last volume, except that the blotches are deep plum purple in colour, without any tinge of violet. The flower measures over four inches across its broadest diameter, and the markings mostly consist of large, irregular blotches, more or less confluent, and thus leaving the white ground very small in amount, and tinged with light purple. The lip is over an inch broad, white at the apex, and yellow round the crest, with a very large purple blotch in front of the latter, and many lines and spots at the sides and base. The heavily-marked sepals and petals show the preponderating influence of the O. Harryanum parent. Mr. Stevens states that it was purchased, with others, as small seedlings, and that this is the first which has reached the flowering stage. It is a great acquisition, and should stimulate others to persevere in hybridising this beautiful genus.

AERIDES ODORATUM.

It is interesting to learn that the fine specimen of Aërides odoratum in the collection of R. le Doux, Esq., keeps in excellent health, and maintains its floriferous character. Mr. Archer writes that it is now again flowering finely, bearing forty-five racemes, and that it is still growing on the same piece of timber as when brought home from Pará, and is growing freely and

Fig. 35. Aerides odoratum.

well. Its history has already been given (*ante*., vi., p. 273, vii., p. 195), but it may be interesting to reproduce the original picture of so fine a plant. It is now pretty evident that some peculiarity in the climate of Pará must have been the cause of its not flowering there, though one would suppose it not so very different from that of its native country.

CALENDAR OF OPERATIONS FOR JULY.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

FOR the temperatures, atmospheric conditions, and general management of the various departments, reference should be made to the Calendar for May, which contains instructions in such matters for the summer months.

The early part of the season was rather cold, but since the advent of June we have had a fair number of warm, sunny days, from which the plants have benefited considerably, fully making up for any lost time in the earlier stages of the season. We must continue to give them the full benefits of the summer weather, the East Indian and Intermediate kinds especially, so that they may grow freely while the conditions are favourable. Give them plenty of moisture, sun, air, and light; remove the shading as soon as all danger of burning or scalding is past in the afternoon. At the same time treat them to a shower bath with tepid soft water—rain water if possible. The air should also then be reduced, but I rarely ever shut up close, always preferring to leave a little on, especially at the bottom ventilators, and, should the nights be cold, giving a *slight* amount of warmth in the pipes. I emphasize the word "slight," for it would be far better to have none at all than too much at this season of the year, for it would only tend to exhaust and dry up the moisture in the atmosphere so greatly needed and so much enjoyed by the plants after the heat of the day. The little I recommend is not so much for the temperature—that will, with few exceptions, be high enough without it, for at least the next two months, but for the atmosphere, inducing a steady circulation and possibly preventing various forms of fungoid growth, usually known as "spot," on the foliage.

SPOTTING OF THE FLOWERS.—This is rather a nuisance during the summer months when but little fire heat, if any, is used, and the cause is distinctly stagnant moisture. It occurs through either having the house entirely closed at night or by having no warmth in the pipes. The principal cause, however, is too much air obstruction and moisture-holding materials about the interior of the house, such as air proof stages, with shingle, cinders, or something else on them, and masses of masonry built up under the stages and in close contact with the pipes; in fact, I have sometimes seen the pipes half buried with one thing or another. The air is thus effectually prevented from freely circulating beneath the plants, and even should the pipes be slightly warmed, as suggested above, it is no cure, because it only adds to the amount of moisture in the air, which condenses at the coolest part of the house, working much havoc with the blooms. I rarely lose a flower in this manner, although frequently being without fire heat, because I am careful to have open wood stages, and nothing whatever

to obstruct the pipes, not even the evaporating troughs which we once thought indispensable.

THE EAST INDIAN HOUSE.—The general conditions here will, just at the present, vary but little from the Cattleya or Mexican departments. The whole of these houses will, of course, be in receipt of good warmth now that new growth is being formed. Of the two, however, the East Indian should be the warmest. Such Orchids as Phalænopsis, Saccolabium, Aërides, and Angræcums are rooting and growing freely. It is not good practice to endeavour to confine the roots of these and other air-rooting kinds, as Renanthera, Rhynchostylis, Aëranthes, Arachnanthe, Camarotis, and Sarcochilus, to the baskets or pots in which they grow. In fact, it is almost impossible, and to attempt it would greatly interfere with their natural free and wild growing propensities, and they greatly resent it. All that this class of Orchids requires is to be made secure in some kind of receptacle, either to suspend above or to stand on the stages, according to its manner of growth, fixing them firm with crocks and charcoal, surfaced with fresh sphagnum moss. They will then soon grow and push out their large, fleshy roots in the air in search of the moisture on which they live. It is best, therefore, not to disturb them by moving them about from one part of the house to another more than can possibly be helped, for when grown in and accustomed to one position they do not readily take to another. These air roots should be more or less supplied with moisture in accordance with the season, whether growing or at rest, by syringing them with soft pond or rain water, made tepid by adding sufficient clean hot water to make the whole warm to the hand.

Other warm growing kinds doing best in this house are Aganisia cyanea, which should be grown on rafts in small baskets, and suspended in a light part, Cyrtopodium, which should be grown in baskets or pans of firm peat and suspended, Chysis, also in baskets suspended, Grammatophyllum Fenzlianum, and Grammangis Ellisii, both of which grow best in baskets, and are fond of plenty of light and moisture at this season.

Very little re-potting should now remain to be done, and the present month should practically see it all completed, excepting, perhaps, a few plants here and there. I cannot recommend late summer or autumn potting generally, especially in localities where, for some reason or another, the winters are comparatively dull, though in bright country gardens I admit the evil effects are not so great and marked. Therefore, if there are still any Cattleya Trianæ or Mossiæ, or other spring and early summer blooming kinds remaining to be done, they should be taken in hand at once. By the end of the present month, some of the earliest plants of C. Warscewiczii and C. Warneri to bloom will be pushing out new roots

and ready to re-pot; also the Lælia purpurata, and a few others that may still be undone. The above named, together with many other inmates of this department, also Lælia anceps and the Mexican Lælias generally, should now be very actively growing, and will require nothing more than to be well attended to, spraying them overhead early in the afternoon, as soon as the shading is removed.

The deciduous Calanthes are now getting pretty strongly rooted, and may receive more water at the roots. A little weak farm-yard manure may also be given occasionally; though if they have been potted into rich, loamy soil but little manure is needed, if any at all. If soft pond or rain water is used for watering, very few Orchids, indeed, are the better for the manure, in fact, there is always an element of risk and danger attached. That, in some few cases, a dose or two of weak, liquid manure does no harm but possibly good, I do not doubt. Such, for instance, as a pot-bound Cœlogyne cristata, Lycaste Skinneri, or Cypripedium insigne, which are practically starving for more root room, but then the proper course would be to give more root room and generous soil to feed upon. Hard tap water, we know, is no good for plants to thrive upon, but when no other is to hand, it should always be exposed to the air in tanks before using, and a few wood ashes, or other burnt vegetable matters, may be thrown in, which will, to some extent, make up for the deficiency of carbon.

DENDROBIUMS are now making good clean growth, and here again but very little repanning and basketing will remain undone. The syringe should now be pretty active among them, it being a good plan to syringe two or three times daily on all bright hot days. With air, and a little fire warmth, as before stated, I now find but little damping-off of the new growths, no matter how much addicted the species may be to do so; they one and all have the same fearless treatment, and certainly appear to be all the better for it. Of course, one must expect with a houseful of Dendrobiums to have a mishap now and again by losing a growth. I have proved, anyway, that the mere fact of water lodging in new growths, through syringing, is not by any means a sufficient cause for their damping-off. Some other cause must be at work, such as an insufficiency of air, of light, and possibly a too humid and overpoweringly hot and close temperature, which is not by any means required for their welfare—except, perhaps, in the case of a few well-known sorts from the New Guinea district, of which D. Phalænopsis and D. Johnsonæ are examples.

THE AMATEUR'S HOUSE.—The partitioned-off space of the house, or the cool frame, whichever is in use for the cool Odontoglossums and some few others, must now be kept as cool as possible. Ventilate well all night as well as day, in a manner so as to avoid arid draughts. Shade rather

heavily during bright weather, removing the same about five or six o'clock. Keep all the inmates well supplied with moisture, fumigate on the slightest traces of yellow thrip, or yellow or green fly. For the House proper, continue the management recommended in last month's Calendar.

FLOWERING OF MALAYAN ORCHIDS.

An interesting paper on the Flora of Singapore, by Mr. H. N. Ridley, Curator of the Singapore Botanic Garden, has recently appeared in the *Journal of the Asiatic Society*, Straits Settlement branch, from which we make some extracts as to the period of flowering of the Orchids of this district:—

"Very few plants have a definite flowering month. A large number flower more or less regularly throughout the year. Others flower at regular periods three or four times a year, almost every plant of a given kind flowering simultaneously in the district. This is best known in the case of the Pigeon Orchid, Dendrobium crumenatum. In this plant the flowers are produced at periods of a little over a month, or two months. The exact day differs in different parts of the peninsula, but in each district they all appear on the same day, and it is remarkable that plants brought to Singapore, even from as far north as Siam, open their flowers on the day for Singapore, and not on that for Siam. It is not rare, however, to find certain plants of Pigeon Orchid which do not flower on the regular day, but have a distinct day, which they appear to keep with equal regularity. A curious fact is that another species of Dendrobium (D. criniferum) invariably flowers in Singapore on the day preceding that of D. crumenatum, whenever that happens to be. It might be thought that the weather in the district in which the plant was growing was the influencing agent, but this appears to have but little effect on the Orchids. On one occasion (Dec. 5th, 1893) the Pigeon Orchids developed their flowers so far that they were obviously ready to open them on that day, but an extraordinarily heavy rain retarded them, and the flowers opened the next day, but, except in cases like this, the weather previous to the flowering does not seem to make any difference to the date of flowering. . . . It can easily be understood that it is very important to a plant that all should open on the same day, in order that they may be cross-fertilised by the insects that visit them, and this is especially the case in plants in which the flowers last but a single day, as in the case of the Pigeon Orchid, but it is difficult to see how this is brought about. Some few plants have a regular flowering season, such as Calanthe curligoides, in September, and Grammatophyllum, July and August."

NOTES.

THREE meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during July, on the 3rd, 19th, and 31st, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on July 20th. The Orchid Committee meets at noon and the exhibits are open to inspection from 1 to 3 o'clock p.m.

A superb inflorescence of Lælia cinnabarina is sent from the collection of Mrs. John Hollond, Wonham, Bampton, N. Devon. It measures 21 inches long, and bears twelve finely developed flowers, while a second inflorescence on the plant is but little inferior. When thus grown it is a most handsome Orchid, for its flowers are of a most brllliant cinnabar-orange colour—by no means common in the family—and are arranged in a most graceful raceme.

A small inflorescence ot Odontoglossum crispum is sent from the collection of J. Wilson Potter, of Croydon, in which both flowers are curiously abnormal, one having both petals united to the back of the column, and the second has one petal united in a similar way. It illustrates the tendency to cohesion and adhesion of the floral organs so common in the family, but may or may not prove to be a permanent character.

The May number of Messrs. Cogniaux & Grossen's *Dictionnaire Iconographique des Orchidées* contains figures of Arachnanthe Lowii var. Warocqueana, Cattleya Trianæ Massangeana, Cypripedium × nitens var. Sallieri, C. × Helvetia, Dendrobium spectabile, D. Devonianum, Lælia anceps var. alba, L. Jongheana, L. superbiens, Masdevallia bella, Oncidium Phalænopsis, O. incurvum, and Pescatorea Klabochorum.

A curiously abnormal flower of Paphiopedilum barbatum is sent from the collection of E. F. Clark, Esq., of Teignmouth. There are two sepals, which are partially united, placed side by side under the lip, and coloured like the dorsal sepal, which is either missing or drawn completely out of place; the two petals also stand erect above the lip, like a pair of horns, and the staminode is absent. The plant has previously borne both normal and abnormal flowers, but the present one is more than usually peculiar, and has a very quaint appearance.

A very fine flower of Odontoglossum luteopurpureum radiatum is sent from the collection of M. Jules Hye-Leysen, of Ghent. The peculiarity of this variety is the broad, much dilated front lobe of the lip, which, in the example sent, is particularly well marked. The spike bears ten flowers.

Flowers of the remarkable Cattleya Mendelii Janus are again sent by Mr. C. C. Hurst, F.L.S., of Hinckley, which show that the plant maintains its sportive character. Some of the flowers are again without lips, and others have this organ present, with the front lobe very brilliantly coloured. The contrast between the two is very striking.

An inflorescence from the collection of D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, shows a similar character, one flower being normal and the other lipless.

VANDA TERES.

A PHOTOGRAPH showing a good branched plant of Vanda teres from the collection of Dr. Cranstoun, Broad Street, Ludlow, is sent by Mr. Godfrey, together with a fine inflorescence. The plant has been grown on from a single piece about a foot long, which was obtained by Dr. Cranstoun about five years ago, and has since been grown in the stove, where it gets plenty of sunshine and moisture. Last year it was cut down and repotted, having become rather too tall, and it is now a compact plant about two feet high, bearing five or six racemes. Mr. Godfrey remarks that the plant is sprayed three or four times a day to encourage the aërial roots to grow, and that slight shading is used. Some growers experience a difficulty in growing and flowering this species, but it probably arises from being placed in an unsuitable situation, but we believe that the secret is to obtain sturdy, well-ripened growths, for which plenty of light and sunshine is essential.

ORCHID PORTRAITS.

CATTLEYA LABIATA LUEDDEMANNIANA LOWII.—*Amer. Gard.*, xxi., p. 277, fig. 61.

CATTLEYA TRIANÆ (specimen plant).—*Amer. Gard.*, xxi., p. 309, fig. 65.

CYMBIDIUM × I'ANSONI.—*Journ, Hort.*, 1900, xl., p. 475, fig. 126.

CYPRIPEDIUM CHAPMANII MAGNIFICUM.—*Journ. Hort.*, 1900, xl., p. 501, fig. 134.

CYPRIPEDIUM ELLIOTIANUM.—*Wein Ill. Gart. Zeit.*, 1900, p. 175, t. 2.

CYPRIPEDIUM × FRAU IDA BRANDT.—*Amer. Gard.*, xxi., p. 375, fig. 78.

CYPRIPEDIUM INSIGNE SANDERÆ.—*Amer. Gard.*, xxi., p. 329, fig. 68.

CYPRIPEDIUM SUPERBIENS.—*Journ. Hort.*, 1900, xl., p. 525, fig. 142.

DENDROBIUM × DALHOUSIE-NOBILE.—*Gard. Chron.*, 1900, xxvii., p. 379, fig. 125. D. DALHOU-NOBILE.—*Journ. Hort.*, 1900, xl., p. 523, fig. 141; *Gard. Mag.*, 1900, p. 364, with fig.

DENDROBIUM SPECTABILE.—*Amer. Gard.*, xxi., p. 239, fig. 48; *Garden*, 1900, lvii., p. 486, with fig.

EPIDENDRUM × WALLISIO-CILIARE.—*Garden*, 1900, lvii., p. 422, with fig.

LÆLIA TENEBROSA, WALTON GRANGE VAR.—*Journ. Hort.*, 1900, p. 539, fig. 146.

LÆLIO-CATTLEYA × HERODE.—*Gard. Mag.*, 1900, p. 348, with fig.

LYCASTE × BALLIÆ.—*Gard. Mag.*, 1900, p. 331, with fig.

MILTONIA VEXILLARIA (group).—*Gard. Chron.*, 1900, xxvii., p. 369, fig. 120.

ODONTOGLOSSUM CRISPUM BRITANNIA.—*Garden*, 1900, lvii., p. 415, with fig.

ODONTOGLOSSUM × ROLFEÆ OPTIMUM.—*Journ. Hort.*, 1900, xl., p. 475, fig. 127. WALTON GRANGE VAR.—*Journ. Hort.*, 1900, xl., p. 547, fig. 147; *Gard. Chron.*, 1900, xxvii., p. 415, fig. 136.

ODONTOGLOSSUM × SOUVENIR DE HYE DE CROM.—*Gard. Mag.*, 1900, pp. 332, 333, with fig.

ONCIDIUM NANUM.—*Gard. Mag.*, 1900, p. 393, with fig.

PHAIUS BICOLOR.—*Journ. Hort.*, 1900, xl., p. 499, fig. 133.

PLATYCLINIS GLUMACEA.—*Gard. World*, 1900, p. 665, with fig.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily).

E. F. C. If your plant is part of the original Paphiopedilum insigne Sanderæ the flower sent was undeveloped. See what it is like next year, when you will have an opportunity of comparing it with the group of yellow flowered forms. A flower of the original plant was figured at page 41 of our second volume, where its history is given. 2 is Odontoglossum × Coradinei (a hybrid between O. crispum and Lindleyanum); 3, a good Oncidium crispum; 4, probably a form of O. curtum; 5, Dendrobium chrysotoxum; and 6, Epidendrum fuscatum.

A. J. K. Dendrobium calceolare (D. moschatum is a form of the same).

Photographs received, with thanks. J. W. A., J. G., A. W. H. (next month).

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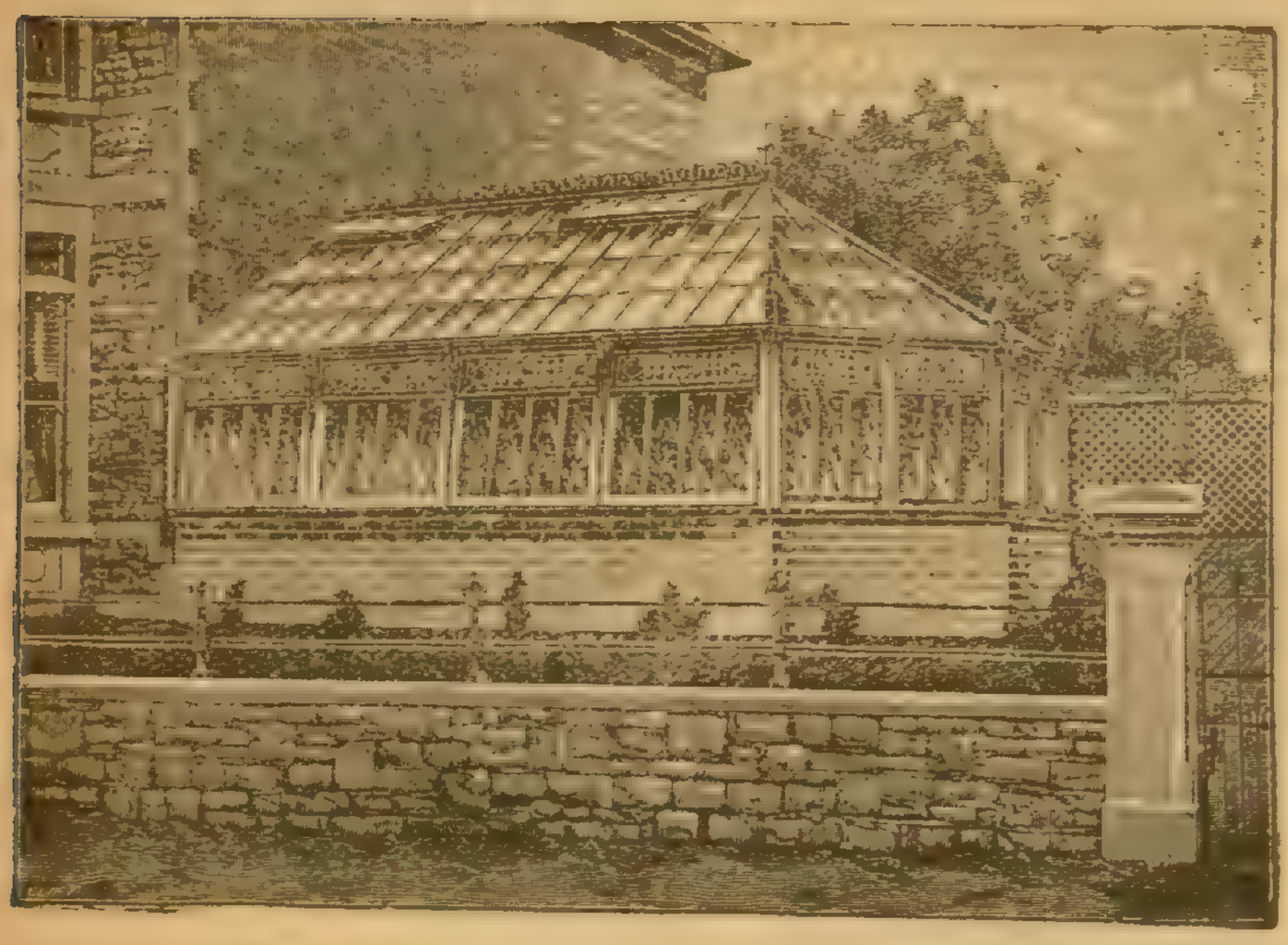

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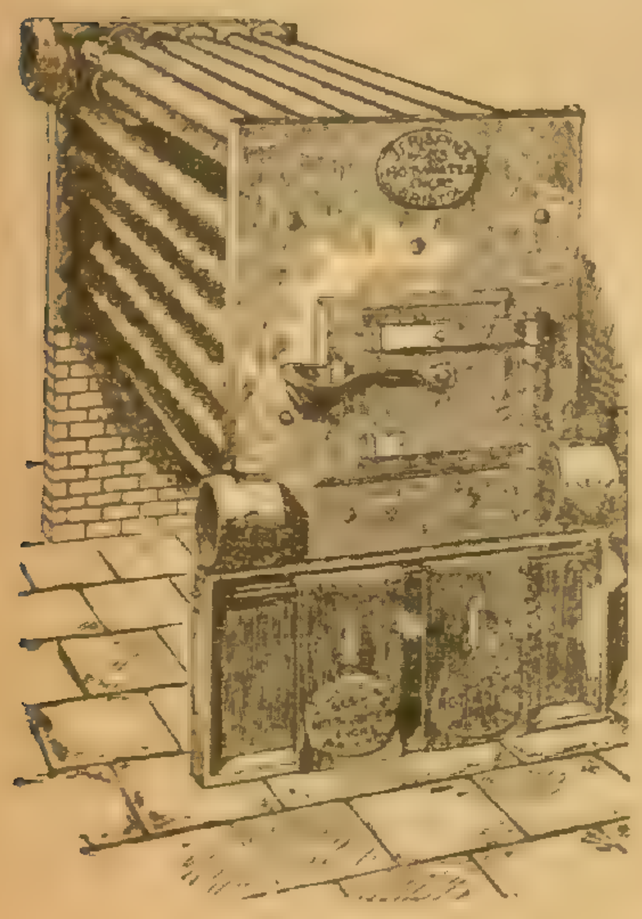

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DIES ORCHIDIANÆ.

THOSE of my readers who have not forgotten the exciting history of Eulophiella Elisabethæ will perhaps be glad to know that another chapter has been added to the story. I have received a Catalogue of Orchids offered for sale bearing the title "Liste des Orchidées récoltées par M. L. Hamelin, Voyageur Naturaliste, chargé de Mission à Madagascar," and find that it contains an account of the plant in question, which is here translated from the original French :—

"EULOPHIELLA ELISABETHÆ.

"I first discovered and introduced this remarkable species into Europe from Madagascar. It was in 1890 that I sent the first plant, and in 1893 I succeeded in bringing over a new importation in good condition. The few rare plants since introduced have arrived in rather bad condition, so that it may be said that all those which have flowered, and raised the enthusiasm of Orchid lovers, have passed through my hands.

"Being desirous of introducing other Eulophiellas that I have discovered in my former voyages, I started for Madagascar at the end of 1899, and my first care was to collect Eulophiella Elisabethæ.

"Unfortunately the successive cyclones which have ravaged the part of the island on which they grow, the bush fires, and the collections made by inexperienced people, have caused the deaths of thousands of plants, and made this species so rare in its native country that it is very probable that the Government of France will forbid the exportation for some years.

"Eulophiella Elisabethæ is well known to amateurs, but a thing that is not generally known is, that it grows among the leaves and fibres of a

particular kind of palm, which the natives work, and which entails the destruction of many plants.

"The rare examples that I have succeeded in introducing, in perfect condition, make up the whole of my collection, and I doubt whether it will be possible to re-introduce specimens in such good condition.

"The plants put up for sale are very sound, and are just on the point of growing."

It may be added that eighty-nine plants are offered for sale, at prices ranging from 500 down to 12½ francs.

It would thus appear that we have reached a new era in the history of this plant. In 1893 it could be written:—"Excepting young and very small plants, no more Eulophiella are to be found, and the plants left will be guarded by my brother-in-law until they may be wanted by me. At least several years must elapse before these small plants are large enough to gather. Amateurs of this superb Orchid may be sure that no plant can, or will, be imported. I can guarantee that no man can collect them. My brother-in-law's will is absolute in the country of the Eulophiella." See *O. R.*, ii., p, 231. And now? The protector seems to have failed in his task. Of course he would be powerless against cyclones and bush-fires, but he might have looked after inexperienced collectors, and kept the destructive propensities of the natives in check. And where is the terrible Madagascar lion which played so patriotic a part in guarding the Eulophiella against all and sundry who ventured within the district in which it grows?—*l. c.*, p. 101. All seem to have disappeared, and the result is that the poor plant is in rather a bad way. On the whole I am rather glad to find that the Government of France is likely to step in and prevent its extermination.

The two stories, it must be admitted, do not hang together very well, and there is yet a third variant which is attributed to the same collector, in which the question is asked as to "what price you offer for the remainder, because *I have entirely destroyed the plant in its native habitat.*" *O. R.*, i., p. 234. The italics are mine. I do not vouch for the accuracy of this version, but it has long been on record, and I have not yet seen it publicly repudiated. Things are evidently getting a little mixed, and the historian of the future may have some difficulty in extricating the few grains of fact. I relinquish the task joyfully.

In my last notes, at page 194, I alluded to the meeting of the R. H. S., held at the Old Deer Park, Richmond, on June 27th, in conjunction with the Annual Show of the Richmond Horticultural Society, and to the fact

that the Orchid Committee, though present in force, had practically nothing to do, because most of the Orchids exhibited were in a separate tent, in which, apparently, the Committee had no *locus standi*. The point, of course, was that the two meetings might as well have been five hundred miles apart, so far as any union or combination was concerned—at all events until luncheon time came round—a condition of things that left something to be desired, especially as some of the local exhibits were deserving of recognition, and the Committee had been brought down there, presumably, for such a purpose. It is interesting, however, to note that two of the plants found their way to the Drill Hall at the next meeting, and gained First-class Certificates, namely Lælio-cattleya × Wiganiæ and L.-c. × Henry Greenwood var. superba.

At the meeting held on July 17th, I noticed a particularly interesting exhibit, namely, a series of coloured drawings of Orchids certificated by the Society during recent years. Some three hundred were on view, and it was understood that the remainder, if not the whole collection, would be staged at the next meeting. It is an extremely valuable series, and a valuable record of the work done by the Society—so much so that one can only regret that it was not begun sooner. Many of the earlier certificated varieties have been lost sight of, and some of them are likely enough to reappear in the new series. But in any case these pictures should prove invaluable in any complete system of registration, and if it could be extended so as to include such of the earlier varieties as still exist, it might prevent some confusion in future.

ARGUS.

THE HYBRIDIST.

PHAIUS × OAKWOODIENSIS.

IT was a very happy idea of Mr. Cookson's to cross the tall and vigorous Phaius Wallichii with the beautiful P. tuberculosus, which no one seems able to grow successfully, for the resulting hybrid P. × Cooksoni combines the best characters of both parents to a very great extent. Subsequently Mr. Cookson re-crossed the hybrid named with the pollen of another beautiful Madagascar species, namely P. Humblotii, giving rise to the above-named beautiful form, which deservedly received a First-class Certificate from the R. H. S. on July 17th last. It has apparently the excellent constitution of the seed bearer, and the plant exhibited carried a splendid spike of flowers most resembling those of *P.* Humblotii in general shape, but larger in size and, of course, different in colour. The sepals and petals are of a delicate rosy tint, spreading or somewhat reflexed, and the well dis-

played lip is of a rich ruby purple, with a pair of prominent yellow crests. It is evident that these hybrid Phaiuses will occupy a prominent place in our collections in future, and we should like to see the result of again crossing P. × Cooksoni with the pollen of P. tuberculosus. A plant with the flowers of the latter and an improved habit is a desideratum, and the matter would be worth following up if pollen could be obtained.

Cattleya × Sir F. Wigan.

This handsome hybrid, which is derived from Cattleya Schilleriana ♀ and C. Dowiana aurea ♂ has just flowered in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, and promises to be a brilliant acquisition. In general shape, it bears a considerable resemblance to the handsome C. × Whitei, which is not surprising, considering that C. Schilleriana is one parent of both, and that the second parents of the two are such allied forms as C. Warneri and C. Dowiana. In colour even the difference is less than might have been anticipated, had we not learnt by experience how largely the character of C. Dowiana is lost in its hybrids. Apart from this, the present novelty has plenty of distinctive character. It may be described as a considerably enlarged edition of C. Schilleriana with the petals about twice as broad as the sepals, and both of a nearly uniform light rose-purple shade, while the strongly three-lobed lip has the front lobe very broad, veined and mottled with rich crimson-purple on a lighter ground, the side lobes less mottled with similar colours, and the disc distinctly veined with yellow, and bearing some additional yellow markings in front. In this, as well as in the generally modified character, the influence of C. Dowiana is distinctly seen. The plant received a First-class Certificate from the R. H. S. on July 31st.

Lælio-Cattleya × Remula.

This is a promising little hybrid, raised by Mr. Seden for Messrs. James Veitch and Sons, from Cattleya Aclandiæ ♀ and Lælia tenebrosa ♂ ,which received an Award of Merit from the R.H.S. on July 31st. The plant is at present very small, and has six pseudobulbs, one of which has two leaves, and the remainder but one. The flower is fairly intermediate in character, and the sepals and petals are of a coppery yellow tint, unspotted, and most resembling those of the Cattleya parent in shape. The lip is three-lobed, with the front lobe light purple with somewhat darker veins, and the side lobes and disc nearly white. The latter are convolute, and rather longer than the column. The plant is still very small, and is obviously far from having reached its normal development, for it bears but a single flower, not yet equal to those of the Cattleya parent in size.

CATTLEYA × INTRICATA.

A RECENT note respecting the parentage of Cattleya × intricata maculata (O'Brien in *Gard. Chron.*, 1900, xxviii., p. 41) has induced me to refer back to the history of the plant, with the result of showing that it ought to have been included among natural hybrids of proved parentage (*Journ. Roy. Hort. Soc.*, xxiv. p. 192), and it may be interesting now to clear up the matter. The note in question refers to a plant identified as C. × intricata maculata, which has flowered in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno, among other imported Brazilian Orchids, and to which Mr. J. O'Brien, in identifying it with C. × intermedia maculata, alludes as a "natural hybrid between C. amethystoglossa and C. intermedia. It is a larger flower than C. intermedia, and seems to well bear out the supposition of its parentage. The sepals and petals are of a delicate rose or blush-pink, with a slight yellowish cast on the sepals, and a number of purple markings within the margins. The front of the lip is bright amethyst-purple, the basal part white, tinged with rose."

C. × intricata was originally described in 1884 by Reichenbach as a "*n. hyb. nat.*?" He remarked:—"Ah, those dreadful 'uniques'! They are the pride of collectors, the despair of poor botanists who have to name them. The habit of this most recent riddle is that of Cattleya intermedia, as I am informed by its actual excellent possessor. The flower makes one think of those of C. intermedia, the narrow sepals and petals being lightest white-rose, the lip is that of Lælia elegans picta, only that the sharp-angled, long side laciniæ are white, the free blade of the mid laciniæ, with abrupt stalk, of the deepest warm purple. Column light rosy, pollen of a Cattleya. The plant has puzzled Mr. S. Low himself, whose eyes are so much accustomed to judge bulbs of our pets. After a long, vexing meditation I cannot but endorse Mr. S. Low's view that it has the strains of Cattleya intermedia and Lælia elegans. I expect the future possessor of this *rarissima avis* will have less anxiety than either Mr. S. Low or I have endured with it."—*Gard. Chron.*, 1884, xxii., p. 12.

It subsequently appeared that there were two plants, which passed into the collection of H. Little, Esq., of Twickenham, and in consequence of a query of mine, when compiling the list of Garden Orchids, "May it not be a form of C. intermedia?" this gentleman sent to Kew an inflorescence and pseudobulb, which convinced me that it was a "natural hybrid between C. intermedia and one of the forms of guttata—possibly the variety Leopoldi."—*Gard. Chron.*, 1889, vi., pp. 38, 70.

The following year C. × intricata maculata was described by me as a plant which had just flowered in the collection of Malcolm Cooke, Esq., of Kingston Hill, differing from the original form in having the sepals and

petals of a "delicate rosy blush, with many rosy-purple spots." It was collected on the mainland of Santa Catherina, Brazil.—*Gard. Chron.*, 1900, vii., p. 763.

Now comes the confirmation of its parentage. In 1897 a plant which had been raised in the establishment of Messrs. F. Sander & Co., St. Albans, between C. Leopoldi ♀ and C. intermedia ♂, was exhibited at the Temple Show in 1897, and was described as C. × intricata var. Rossii, with the remark:—"It is particularly interesting because derived from the two supposed parents of the natural hybrid, C. × intricata, and the general resemblance is so great that the present one must be considered as a variety of C. × intricata, whose origin is thus demonstrated.—*Orch. Rev.*, v., p. 169.

The distinctness of C. Leopoldi from the original C. guttata had already been recognized, and this note, which has subsequently been overlooked, sets the matter at rest. The two parents are known to grow together in the Santa Catherina district, while C. amethystoglossa grows far away in Bahia, where we believe that no C. intermedia has ever been found. It is interesting to have the matter cleared up. It may be added that another good form of C. × intricata has now flowered in Messrs. Hugh Low & Co.'s recent importations.

R. A. Rolfe.

ORCHIDS AT CLARE LAWN.

Among the choice Orchids now flowering in the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, may be mentioned a good plant of the rare Bollea cœlestis, bearing a couple of its remarkable flowers. It succeeds well in the Phalænopsis house, where also we noticed a fine group of five plants of the pretty little Phalænopsis in flower. Sobralia × Veitchii aurea and S. × Wiganiæ, standing side by side in another house, are very handsome. The Cattleya group includes the beautiful C. × Whitei bearing four flowers, an exceptionally fine form of C. × porphyroplebia, C. Aclandiæ nigrescens having sepals and petals suffused with blackish brown, a good C. × Hardyana, a fine hybrid between C. Schilleriana and C. Dowiana, called C. × Sir F. Wigan, C. Eldorado Wallisii, a nearly white form of C. Loddigesii, together with the type and a larger form intermediate in colour, and about ten plants of C. Warscewiczii. These latter are suspended in small receptacles from the roof, and continue to flower freely every year, though apparently in need of re-potting. We noted also a very richly coloured form of Lælio-cattleya × Pallas, and a fine specimen of Platyclinis filiformis bearing about sixty of its graceful racenes.

ORCHIDS IN SEASON.

CATTLEYA GASKELLIANA is one of the most useful Orchids at the present season, as it comes in at a time when the bulk of the showy species are over. It is also very fragrant and variable in colour, a point well illustrated by five pretty forms from the collection of John W. Arkle, Esq., Holly Mount, West Derby, Liverpool. One has white sepals and petals, of good form and substance, with the side lobes of the lip similar in colour, and the front lobe rosy purple in front of the deep yellow disc. The others range between this and the typical form, all being very beautiful.

Some beautiful Odontoglossums are sent from the collection of T. Baxter, Esq., Oakfield, Morecambe, by Mr. Roberts. They include a dozen forms of O. crispum, one of which has two enormous red-brown blotches on each sepal and one on the lip, while the rest of the flower, including the petals, is pure white, affording a very striking contrast. A second chiefly differs in having rather smaller spots of lighter colour; a third pretty form has a few small spots, and a tinge of rose on the sepals; and a fourth has the sepals suffused with rose, and bears a few small spots, while the petals are paler and unspotted. The others are more typical in character. A form of O. × Andersonianum has all the segments well spotted, with a pair of diverging lines on the side lobes of the lip, nearly parallel to a longitudinal pair at the base of the petals, giving a rather curious effect. A form of O. × Denisonæ has rather narrow white segments, well blotched with red-brown on the sepals and lip. A good form of O. Pescatorei, with rosy sepals and white petals, is also remarkable for a very broad band of rich purple all round the side lobes of the lip, and some spots in front of the crest. A form of O. × Coradinei, and a very fine flower of Oncidium crispum grandiflorum, having a greenish bronzy tinge, may also be mentioned.

Several good forms of Odontoglossum crispum are also sent from the collection of J. F. Laycock, Esq., Wiseton, Bawtry, Notts, including a very large and round, blush white, unspotted form; another with a few small crimson spots on each segment; and a third with a very broad, triangular lip, and a few spots, chiefly on the sepals. The others are more typical in character.

A handsome form of O. crispum is also sent from the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, in which all the segments are well blotched with deep red-brown, those on the petals being rather smaller than the others. Three pretty forms of O. Pescatorei are also sent, one of which has many small spots on the lip only, and another is blotched on the sepals and lip, but not on the petals.

Mr. A. J. Keeling, Cottingley, Bingley, Yorks., sends three good hybrid

Paphiopedilums; one from P. bellatulum and P. callosum much resembles P. × Richmanii, and should develop into a good thing; another from P. concolor and P. villosum is fairly intermediate in shape and colour, and an attractive flower; while the third is P. × Phœbe, derived from P. philippinense and P. bellatulum, a very promising thing, with the sepals and petals covered with purple dotted lines, on a light yellow ground. A fine raceme of Dendrobium calceolare is also sent, in which the flowers are deep buff yellow without the dark blotches on the lip.

A curious form of Cattleya Gaskelliana is sent from the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, in which the sepals and petals are irregularly marbled with dark purple on a lighter ground. It thus approaches the variety picta, in which, however, the markings are arranged more in the shape of streaks and elongated blotches. A similar marbling is occasionally found in most of the species of the labiata group.

CYMBIDIUM HUTTONI.

AFTER a long interval, this very distinct Cymbidium has again appeared in cultivation, a plant lately imported from Java having flowered at Kew. It was originally introduced from this island by Mr. Henry Hutton, a collector for Messrs. James Veitch & Sons, and flowered in the establishment of the latter in June, 1867, when it was figured in the *Botanical Magazine* (t. 5676). For many years it seems to have been quite lost sight of, and Messrs. Veitch do not even mention it in their *Manual*. It is, however, a remarkable plant, and the remarks originally made by Sir Joseph Hooker, in describing it, that it does not much resemble a Cymbidium, and that the very broad perianth-segments, and their colour, are unique in the genus, are still applicable. It has an oblong, somewhat compressed pseudobulb, bearing two very broad leaves at the apex, and a pendulous raceme of about ten large fleshy flowers, which turn up in a suberect position from the point of their attachment to the rachis. They are about an inch and three-quarters long, rather broad, and densely dotted all over with dark, dusky brown, on a light yellow ground, the spots becoming more purple and almost suffused towards the apex of the petals and lip. In its broad leaves and general appearance it is most allied to C. Devonianum, though in that the pseudobulbs are scarcely developed, and four-leaved. Its re-appearance is very interesting. It is rather curious that it should have disappeared so completely, for Cymbidiums are usually of easy culture, and the present individual seems vigorous enough. It will probably require the same treatment as is given to other members of the genus.

R. A. R.

VANDA TERES CANDIDA.

In 1875 Reichenbach wrote :—"There has been for years and years much talk about the phenomenon of a cream-white Vanda teres, just as there would be of a rosy one, provided the common form were white. I have finally been so lucky as to obtain this *rarissima avis* by the kindness of Mr. Harry Veitch. It has the colours of Dendrobium infundibulum—white, with some yellow on the lip. It comes from Lord Crewe, in Cheshire, and was grown

Fig 36. Vanda teres candida.

by Mr. Whittaker, his gardener" (*Gard. Chron.*, 1875, iv., p. 225). Afterwards a plant was figured in the *Orchid Album* (vol. ix., t. 409) under the same name, when it was remarked .—"This is the purest white form of Vanda teres that has come under our notice : for several years we have been aware of the existence of an albino form of this species, and we have waited anxiously for it. Various plants have from time to time been pointed out to us as being the veritable plant, but upon examination they have proved to

be but pale forms of the type. The finest white form of this species was flowered by Mr. Whittaker, gardener to Lord Crewe, Crewe Hall, Cheshire," and was named by Reichenbach. The plant figured, however, has a rosy stain on the front lobe of the lip, and as it came from the Duke of Marlborough's collection, at Blenheim, it evidently does not represent the original plant, but rather the variety aurorea, which was described by Reichenbach, in 1881, from flowers sent by Mr. W. Bull (*Gard. Chron.*, 1881, xv., p. 688). The latter was briefly described as "A lovely variety. Flowers snow-white, with a light rosy hue on the anterior part of the lip, and some light yellow in the throat." The form here figured flowered in the Royal Botanic Garden, Calcutta, during April, 1899, and was photographed by Mr. A. E. P. Griessen, who remarks respecting it:—"Its flowers are pure white, as white as any Orchid may be expected to be, with only the disc yellow. Another specimen flowered during May in the Agri-Horticultural Gardens of Allipore. These are the only two specimens that I know of, so far." These examples it would appear belong to the variety candida.

We may supplement our remarks at page 223, as to the kind of treatment this species requires, by the following note sent to Reichenbach by Mr. Prestoe, of Trinidad. Speaking of a visit made by the late Mr. J. Day, in 1895, Mr. Prestoe remarked:—"Mr. Day missed a good thing when our Vanda teres was in flower soon after he left. I had over 250 spikes open at the same time. Some few years ago I placed a good tuft on an old stump of Bauhinia ungula. It was thus fully exposed there; it has always flowered most profusely. Before it has never given a spike. When it flowers it is all brown and shrivelled."

MAXILLARIA SCURRILIS.

A VERY remarkable species of Maxillaria was exhibited at the R.H.S. meeting on July 17th last, by Sir Trevor Lawrence, Bart., under the name of M. scurrilis, to which a First-class Certificate was given. It is obviously allied to M. longissima, Lindl., but is markedly different in having the sepals and petals blotched with dark, blackish brown. One species having this character has been described, namely, M. speciosa, Rchb. f. (*Gard. Chron.*, 1876, vi., p. 197), of which the author remarks as follows:—"Maxillarias are, as a rule, not received in favour, though some are rather decorative. Thus, I prefer a beautifully flowering M. lateo-alba or venusta to many of the inferior Odontoglossa. The species just now sent from New Grenada by Messrs. Klaboch appears to be a rather recommendable thing. The sepals and petals are narrow, acuminate, spreading, pallid (white and yellow?), and covered with numerous blackish-purple spots, 5-6 inches long. The lip is of same colour. The flowers are considerably

larger and far handsomer than its next ally, Maxillaria longissima, Lindl., which has brown flowers and a lip broader at base, much narrower in its short middle lobe, and an androclinium without any border. Let me add that Messrs. Klaboch informed their enterprising uncle and patron, Senor Benito Roezl, that some plants had twenty flowers open at once, and that each of these twenty flowers exhaled a most delicious perfume. Is not this enough to forgive a Maxillaria its birth as a Maxillaria?" The description was obviously made from dried specimens, and, so far as I know, the species has not appeared in cultivation. There is just a possibility that the above plant may be identical, though some dried flowers from a collector of Messrs. Charlesworth, Shuttleworth & Co., belonging to the same group and having spotted segments, have previously been referred to M. speciosa, but do not agree with the present one. We now appear to have a second species of the longissima group with spotted segments, but which of them is the one described by Reichenbach is not quite certain. The present one agrees best in its more acuminate segments, which vary from over five to nearly six inches long. The bract, it is true, is only as long as the ovary, while Reichenbach described it as rather longer, but even here the dried flowers just mentioned offer a great discrepancy, inasmuch as they have bracts twice as long as the ovary. The point must remain doubtful for the present.

R. A. R.

LATIN NAMES.

ANOTHER correspondent has asked us to give the rule for latinising proper names when applied to the nomenclature of Orchids and other plants, and, now that the pressure on our space is less, we may say a few words on the question. It is quite true, as pointed out, that a great diversity of practice prevails, and some of it is probably due to misconception of the requirements of the case.

Many years ago the British Association for the Advancement of Science appointed a Committee to consider the Rules by which the Nomenclature of Zoology might be established on a uniform and permanent basis, and among other matters they attempted to deal with the question of latinising proper names, though without much success, as may be seen by a discussion of the question which was reproduced at page 300 of our fifth volume. We believe that there is no Latin rule which is applicable to the case of modern names, and one can only be guided by analogy, and conform as closely as possible to the custom of classical authors in the termination of Latin names. Sir Joseph Hooker, in the discussion above-mentioned, remarked:—"The fact is, that there is no practicable rule for such terminations, and

euphony is the only safe guide. Names are *means*, not *ends*, and rules that lead to embarrassment defeat the objects for which a nomenclature is intended."

One of the great difficulties pointed out is that of determining whether certain names in the genitive should terminate in "i," or "ii," but this depends upon the correct formation of the nominative, or, in other words, how certain modern names should be latinised. Some few are already in Latin form, and these should be dealt with as per Latin rule. For example, Triana becomes Trianæ in the genitive. In some other cases analagous examples can be found among Latin authors, and these should be dealt with accordingly. For example, the name of the Greek poet Homer is latinised as Homerus, which becomes Homeri in the genitive, and furnishes a model for such modern names as Hooker, Warner, Sander, &c. In some cases even Latin custom is not uniform, as Hermes, Hermæ, and Euclides, Euclidis, which are two words selected at random. Finally, for certain modern names no exact equivalent can be found, and one has to be guided by analogy. Notwithstanding these difficulties, however, the great majority of modern names can be latinised without much trouble when the necessity for it arises, as is the case when they are used commemoratively in scientific nomenclature.

If it is not easy to formulate an exact rule to meet all cases, it is at least possible to lay down a few guiding principles, and the very fact that we have several times been asked to do this disproves a remark which has been made, that "nobody in these enlightened days will pay any attention to rules of construction." If any of the following suggestions are objectionable, or open to improvement, we hope they will be pointed out, but, if otherwise, we hope to see them generally adopted.

All personal names used commemoratively which are already in Latin form should have the genitive formed regularly as in Latin; thus Triana becomes Trianæ. In the case of Cattleya Trianæ two objections have been urged against this. One is that Triana is masculine, the other that Trianæi is the original spelling. The first is invalid, because all masculine Latin names which end in "a" take "æ" in the genitive; and the second might be used in defence of any grammatical blunder, or even of a mere printer's error, and we should never stretch the law of priority so as to include such cases.

All other names for which, in point of form, a Latin equivalent can be found, should be declined in accordance with precedent. Thus names ending in "er" would be declined like Homer, by the addition of "us" in the nominative, and "i" in the genitive, thus Warner, Warnerus, Warneri. The majority of personal names are latinised by the addition of "us," but in some cases, for the sake of euphony, "ius" is added, the "i" forming

part of the stem of the word, thus remaining unchanged. Such words terminate in "ii" in the genitive, like the Latin Curtius, gen. Curtii, when the second "i" cannot correctly be dropped, as is sometimes done. Modern names composed of a single syllable should be thus declined, hence plants named after Lobb, Veitch, or Clark, require the addition of "ii" in forming the commemorative name. When a personal name ends in "e," this latter forms part of the stem of the word, which is followed by the addition of "us," to form the nominative, the latter becoming "i" in the genitive. Hence Clarke, Clarkeus, Clarkei. Note the difference between Clarkei and Clarkii, and the reason for the same!

The feminine genitive is formed regularly from the masculine by the change of "i" into "æ." Thus Hookeri, Hookeræ; Wiganii, Wiganiæ; Rolfei, Rolfeæ.

In latinising personal names, the original spelling should as far as possible be preserved. Thus Lindleyi, not Lindleii, is the proper form for a specific name commemorative of Dr. Lindley. In the same way we should prefer to write Cypripedium Druryi rather than C. Drurii, though a rigid adherence to the law of priority would require the use of the latter. *Zygopetalum* Mackayi and *Z.* Mackaii form an analagous case. A slight alteration may almost obscure the meaning of a name. Compare O'Brienianum and Brienianum, I'Ansoni and Jansoni, which exist as specific names.

In a few cases it is somewhat difficult to decide whether "euphony" requires the addition of "us" or "ius" to form the nominative; at all events uniformity of practice has not been arrived at, for we have Bensoni and Bensonii, Bensonæ and Bensoniæ, Ashburtonæ and Ashburtoniæ. In each case, however, we should form the nominative by the addition of "us," not "ius" (sounding the "o" long), and thus we consider Bensoni, Bensonæ, and Ashburtonæ, to be the forms of spelling which should be adopted.

Whether these and other cases mentioned are governed by the law of priority is a vexed point. We should say not, for it is too much to expect people to remember two different ways of spelling the same word, a problem that must be faced by those who take the contrary view.

Lastly may be mentioned names in adjectival form, which must agree in gender with the generic names to which they are attached, like Cryptophoranthus Dayanus, Vanda Hookeriana, and Dendrobium Brymerianum. Such names are formed by the addition of anus,-a,-um, to the stem of words ending in a vowel, or ianus,-a,-um, to those ending in a consonant. Such names are supposed to be used in a purely complimentary sense, when the person honoured has had no previous connection with the plant to which his name is applied, though according to this canon some such names convey a false impression. For example, Phalænopsis Sanderiana and

Vanda Sanderiana were named by Reichenbach in honour of the head of the firm who actually introduced them, and in such cases the genitive is more generally used. Feminine complimentary names, indeed, are actually written in the genitive, as Cypripedium Hookeræ, and we see no particular reason why other names should be treated under a different rule. The botanical distinction made is hardly in agreement with Latin usage, for adjectival names can only be used in a qualifying sense. Phalænopsis Sanderiana can only be translated as Sander's Phalænopsis, just as Cypripedium Druryi represents Drury's Cypripedium. The former system adds one, and sometimes two, syllables to the name, as compared with the genitive, and when the latter extends to four, and sometimes to five, syllables, such additions are eminently undesirable.

We trust that these remarks may be useful in elucidating some of the points in this admittedly difficult question.

EPIDENDRUM COSTARICENSE.

This is a distinct and striking species, allied to the well-known E. ciliare, but larger in all its parts, and the side lobes of the lip entire, instead of ciliate. It is a native of Costa Rica, and was described in 1852 by Reichenbach (*Bot. Zeit.*, x., p. 937) from material collected by Œrsted. The pseudobulbs are rather larger than those of E. ciliare, and the reflexed sepals and petals are 2½ inches long, and light yellowish green in colour, while the lip is white with a deep yellow crest. The bracts are about 1½ inches long. It seems to be very rare in cultivation, but a plant has just flowered with Messrs. Charlesworth and Co., of Heaton, Bradford. E. Umlauftii, Zahlbr. (*Wein Ill. Gart. Zeit.*, 1893, p. 1, t. 1) is specifically identical.

R. A. R.

ONCIDIUM SPHACELATUM MAJUS.

The typical form of Oncidum sphacelatum has long been known in gardens, and a fine thing it is, but the variety majus, which is infinitely superior, is decidedly rare. The species was described in 1838 by Lindley (*Sert. Orch.*, sub t. 48, n. 54). The author then remarked:—"Of this there are two varieties, minus, with smaller flowers and the inflorescence compound only at the base, and majus, with brighter yellow flowers and the inflorescence compound almost to the apex when the plant is in good health." The former "variety" proves to be the typical form, and was afterwards figured in the *Botanical Register* (1842, t. 30), with these remarks:—"There are two varieties in cultivation, one much handsomer than the

other, with larger flowers. This is the inferior sort." The latter was based on a wild specimen collected at Mal Pais, Guatemala, by Skinner, and if the variety was ever in cultivation, as Lindley's remark would seem to infer, he did not preserve a specimen. Some plants that we have seen in gardens called O. sphacelatum majus do not agree with the original plant. Mr. Lynch, however, has now sent to Kew a spray, received from a correspondent at Cambridge, which does agree with it. It is a most handsome form, having the lip three-quarters of an inch broad, and the isthmus measures five lines broad. It will probably thrive under the same treatment as the type, which succeeds well in a warm house.

R.A.R.

FAILURES IN HYBRIDISATION.

MR. ORPET'S failure to obtain capsules of hybrid seed on Epidendrum radicans, "though all kinds of pollen available were used" (page 202), confirms the experience of Messrs. James Veitch & Sons with this species (see page 274 of our fifth volume), and it would be interesting to know the exact cause of this failure. In view of the fact that the species is a good pollen parent, we have suggested that the difficulty may be a mechanical one; that the pollen tubes of the large flowered Cattleyas and Lælias are too large to effect an entrance to the micropyle of the Epidendrum ovule; but this would not account for the failure to "set," because fertilisation proper does not take place till the capsule is of considerable size.

Sophronitis grandiflora, on the other hand, has long been known as a bad pollen parent, and Mr. Hurst has a note on the subject in a recent paper (*Journ. Roy. Hort. Soc.*, xxiv., p. 125). "Incompatibility of structure," he remarks, "apart altogether from systematic affinity, may have something to do with the limitation of crossing, for I observe in the above experiments (some of his own) that in all the instances where Sophronitis was crossed with Cattleya, when Sophronitis was the seed parent, good seeds were obtained, which duly germinated, while the reverse crosses, made at the same time and under the same conditions, in every case failed to set a capsule. Now Sophronitis has a very short column, while Cattleya has a decidedly long one, and one can quite understand that, while it would be an easy matter for the pollen tubes of Cattleya to reach the ovules of Sophronitis, yet, on the other hand, it would be much more difficult for the pollen tubes of Sophronitis to reach the ovules of Cattleya, owing to the length of the column duct in the latter."

It would be interesting to know the real cause of these peculiarities, and microscopical examination of the growth of the pollen tubes might throw further light on the question.

SEEDLING ODONTOGLOSSUMS.

In an account of the interesting little collection of F. H. Moore, Esq., of Liverpool, given at page 277 of our last volume, it was remarked:—"With the hope of obtaining seedlings of Odontoglossum × Humeanum we then and there crossed and re-crossed O. Rossii and maculatum." In March last Mr. Moore wrote that the capsule of O. maculatum × Rossii had ripened, but that the strain had killed the plant. The seed had been sown on three pots of O. maculatum. He now writes "I am much delighted and somewhat astonished to find a nice batch of seedlings. Some of them are an eighth of an inch across, and resemble small Spanish onions." We hope in due time to hear of their further progress.

CATTLEYA DISEASE.

Some time ago an esteemed correspondent wrote:—"I have an extremely fine Cattleya × Mantinii nobilior (C. Bowringiana × C. Dowiana aurea), and both last year and this the year-old bulb (not the new flowering one) has decayed in a most unaccountable manner. Both this year and last it commenced just after the flowers on the new bulb were over. I enclose one half of the bulb, and should be extremely glad of your valuable opinion as to the possible cause. We are completely puzzled. The plant is in an intermediate-Cattleya house, where it has always been, and in the same house are both parents in a very healthy condition. It has had no drip from the roof, as might, perhaps, be supposed, nor has it been in any way over-watered, but kept, if anything, on the dry side. The decay commences at the top of the bulb, which has had *no* moisture near to it, and proceeds, in the course of a few days, quickly downwards. As the plant is a valuable one, we are much distressed. We shall be very glad if you can help us with any suggestion as to the cause or prevention, or if it is an inherited weakness, and if you have ever heard of it before. I have heard of aurea disease, but have never seen it. Can it be possible that the special aurea parent in this case has had the disease, and that it is inherited by this plant? The plant is otherwise vigorous, and the variety the finest that I have ever seen."

On examining the bulb, we fail to find any fungus mycelium present, and under the circumstances mentioned, we are at a loss to suggest the cause of the disease. As the season of flowering of this hybrid is again approaching, we should be glad to know if other readers have had a similar experience, and can suggest the cause, or any effective remedy.

THE CATTLEYA FLY.

SOME of our readers have had practical experience with the troublesome pest which we here illustrate from a photomicrograph, and those who now make its acquaintance for the first time may consider themselves fortunate, as the following communication will prove :—

"Last fall I received some plants of Cattleya labiata (vera) which had just arrived from Brazil. After they had been thoroughly cleaned, had all old roots removed, and had been fumigated, they were suspended in the Cattleya House. I noticed at this time that two or three of them showed eyes which had just begun to swell. In course of time, they developed pseudobulbs, rather stunted in growth, but, this occurring during the winter, no attention was paid to the fact, especially as the bulbs at first seemed smooth and even on the surface. At the beginning of April, however, a new growth on a fine white form of C. Mendelii attracted my attention, and

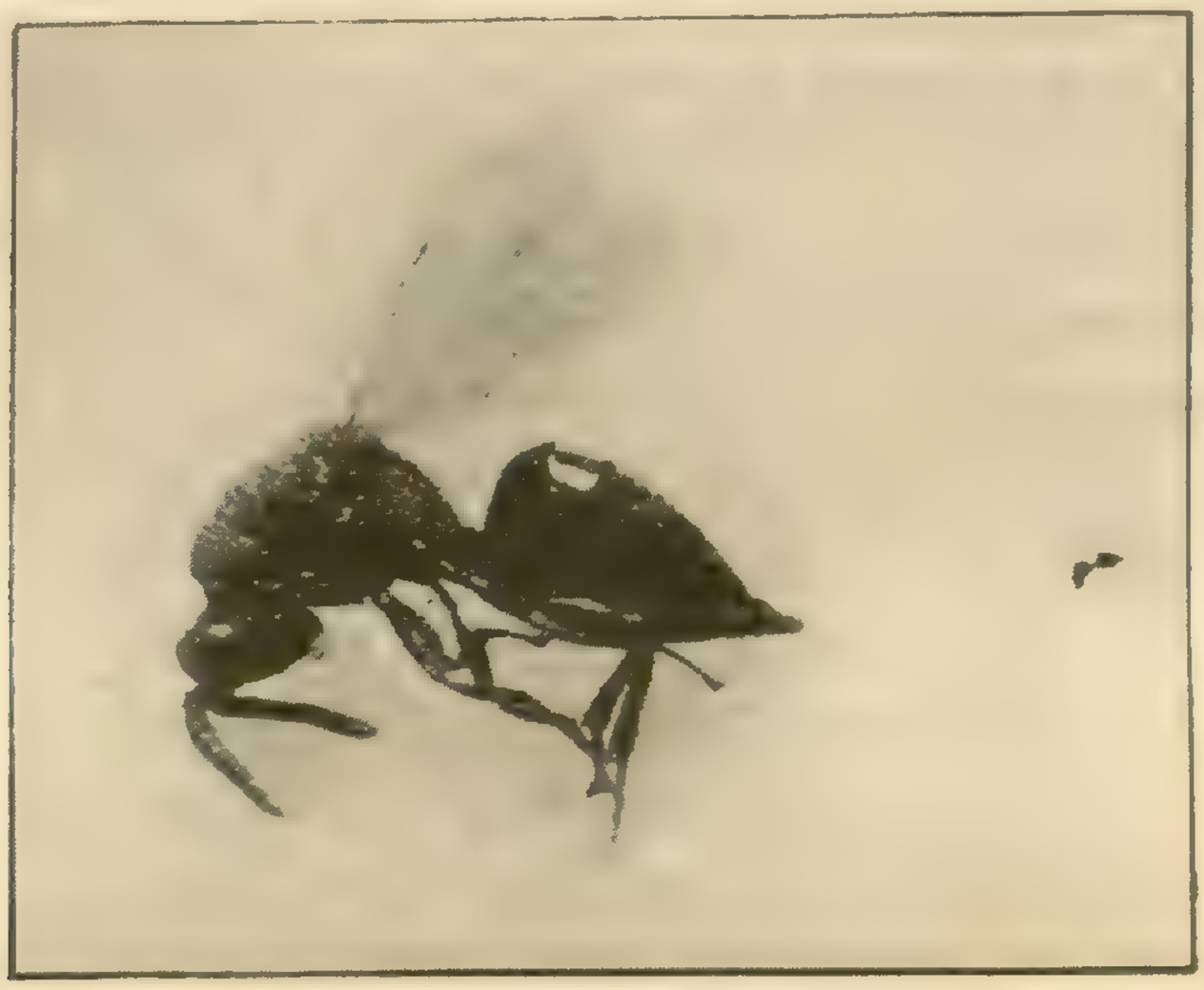

FIG 37. THE CATTLEYA FLY (*nat. size and magnified*).

reminded me of the description of new growths infested with the Cattleya fly. This shoot was removed, and found to contain white larvæ with light brown heads, proving the presence of this deadly enemy to Cattleyas. I also found a growth in the same condition on a Cattleya Trianæ. The plants of C. labiata were at once removed to an ordinary greenhouse, and upon close examination, I found that two stunted pseudobulbs, which had formed during the winter as above described, showed a number of holes from which the insects had already escaped, and it was also apparent that a number of new shoots had been punctured by the insect. Every one, having the characteristic cone-shape, was removed, and larvæ were found in most of them, but not in all, as I find that this deformity of the shoot may be an arrest of growth from other causes than the fly.

"A couple of months have now passed, during which I have succeeded in getting hold of pupæ from a pseudobulb which was allowed to develop, and from these pupæ have been developed four flies, one of which I herewith send. This insect has been photographed through a microscopic lens, enlarging it 10 diameters, and I send you this photo, which also shows the same insect slightly under natural size. The wings, you will see, are transparent and colourless, the body is coal-black, apparently hard, with a dull surface, and measures about a seventh of an inch in length. Only one out of about 20 infected growths has developed a well-formed pseudobulb with sheath, but this bulb has only one hole in it, while the majority of the young shoots have contained 5 to 7 larvæ, and in four instances 7 holes were counted on the surface of each bulb. I send photographs of two such deformed bulbs. I find that one is not always sure of catching the larvæ, even when the shoot is only one inch long, as in two instances I have found a hole in a new growth only an inch long, a cavity inside, and the insect gone. This insect does not leave Lælias in peace, as one of the two new growths just mentioned was on a white Lælia anceps.

"I have watched carefully for the fly at different times of the day, but have never seen it about the plants. Isolation of infected plants, removal of new growths, keeping the plants very moist, and fumigation with Nicotine Extract, seem to have exterminated the fly, without the aid of as low a temperature as the plants will endure, which factor it is impossible to make use of here at this time of the year. I am told, however, by the importer from whom I purchased the plants, that while tobacco smoke will kill the developed fly absolutely, a low temperature and a great deal of moisture will destroy the larvæ and pupæ inside of the growths, and that very little is accomplished by cutting off shoots. It has also been observed that when the infected new growths are entirely covered up with chopped moss, the larvæ or pupæ within have died—probably from suffocation.

"That the insect in my plants came from Brazil is absolutely certain, and it apparently came with plants imported during the warm season, which might indicate that, when imported late in the fall or early in the spring, the pest is killed in transit."

ANDREW W. HOISHOLT.

Stockton, California.

[The insect sent is identical with examples received from correspondents in England, and it seems liable to be re-introduced with every fresh importation from Brazil, though, fortunately, in most cases it has been found possible to stamp it out when due precautions have been taken. Newly imported plants should be carefully examined for any traces of the insect.—ED.]

SWAMP ORCHIDS IN SOUTHERN VERMONT.

A VERY interesting note on "The Orchidaceæ of a series of swamps in Southern Vermont" is given by Mr. Le Roy Andrews in a recent number of *Rhodora* (vol. ii., p. 114), which is here reproduced with slight abbreviation :—

A deep cut in the green mountain range of South-Western Vermont furnishes an interesting study. The floor of this little valley, which extends over a length of some six or eight miles from the vicinity of Pownal, is comparatively uniform in level, and the drainage system is therefore sluggish and broken up for the most part into a series of ponds, swamps, and bays, presenting very diversified conditions of plant-growth. Springs of clear, cold water, from the sides of the steeply overhanging mountains, help to furnish the conditions so favourable to many members of the fastidious family of the Orchidaceæ.

The representative species appearing uniformly throughout all the swamps is Cypripedium spectabile. Specimens of the pure white form of this species are frequently seen. A swamp of deep, black mud, overgrown with trees of ordinary deciduous species, and traversed by cold streams, furnishes also C. pubescens and gigantic specimens of Habenaria hyperborea. The occurrence of Microstylis monophylla in this swamp is interesting, as one of the more southerly stations of this plant in New England, and from the fact that it has not been hitherto reported from this vicinity.

A wet meadow near by, also traversed by cold brooks, is, in proper season, empurpled and richly perfumed by abundant spikes of Habenaria psychodes, interspersed with vigorous specimens of H. lacera. Here also occurs, as might be expected, what is very apparently a natural hybrid between these two species, of which I may speak more at length at some subsequent time. The same meadow furnishes a single dense clump of H. virescens.

A series of peat-bogs further on, however, present the most interesting conditions, and reward the botanist most richly. These bogs are mostly bare of trees, some of the firmer portions, however, being covered by a sparse growth of young tamaracks. Here in May or early June may be found quantities of Arethusa bulbosa, while later appear Calopogon pulchellus and Pogonia ophioglossoides in the greatest profusion, in charming contrast with the pure white, richly fragrant spikes of Habenaria dilatata. Still later comes Spiranthes Romanzoffiana. The occurrence of this last species is especially noteworthy as being one of the extreme southern stations of this plant in New England, only a few miles from the Massachusetts line. In the higher portions of these swamps Cypripedium acaule grows abundantly. The locality is one of great interest.

CALENDAR OF OPERATIONS FOR AUGUST.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

THE COOL HOUSE.—The first half of the present summer was of the kind best suited to the requirements of the inmates of this department. During the first few weeks, however, the excessive heat has been a little trying, making the employment of extra thick shading quite necessary. Nothing is better for this purpose than garden mats thrown over the regular shading, and this keeps the plants beautifully shady and cool. Do not let any plant suffer from an insufficiency of water at the root, but give a thorough soaking as soon as the compost show signs of becoming dry. Give air without stint at all times. During a summer rain it is very helpful to these cool kinds to remove the top lights, wherever it can be done, so that they receive the full benefit thereof. It is still a very good time for the re-potting of any of the Odontoglossums which may be in the right stage of growth, taking care, of course, afterwards to give them ample shade and moisture, including the frequent use of the syringe, so as to encourage renewed growth, and prevent a serious relapse which might otherwise result. The same also applies to other species, such as the summer blooming Oncidiums, as O. concolor, O. Gardneri, and any other species now requiring attention, for they soon recover at this season if they get fair treatment.

Two pretty little Cool House Orchids are Odontoglossum Rossii and O. Cervantesii, which should now have any necessary attention. Two things go against these little Mexican species—one is over-abundance of water at any time when not making growth, and the other over-large receptacles. They prefer small pans or baskets, and but very little pulling to pieces for re-potting purposes. As they are now starting to grow freely, they should be top-dressed with a little fresh sphagnum, and given a fair supply of moisture until the pseudobulbs are matured and their flowering period past, after which they must again enjoy a long and comparatively dry rest.

THE INTERMEDIATE AND CATTLEYA HOUSES.—As all the re-potting in this department is now practically finished, the chief and most important work will consist in giving every attention to the atmospheric conditions, ventilation, shading, &c. The great delight of the cultivator will now be to see the splendid, healthy greenness of the foliage, the plumpness of the old pseudobulbs, and to watch the new ones gradually forming and taking shape, equalling or exceeding in size their predecessors. To bring about this most desirable end, the beautiful midsummer weather we have lately experienced will, of course, be the chief factor. Utilize it as much as possible. Shade and ventilate well and consistently, but above all do not now let anything suffer for want of water, either at the root or in the air. Go through the house every morning and water all those that are beginning

to dry, after which the syringe well plied at intervals will do the rest.

Cattleya Gaskelliana is a grand species for midsummer work, and is now at its best. It is one of those kinds which may be re-potted either very early in spring, when it commences to grow, or immediately after blooming. Whether re-potted now or not, it will continue, after blooming, to make an enormous amount of roots, the new pseudobulbs swelling and plumping up until finally matured. Water should therefore not be discontinued for some time to come. But at the same time it is only reasonable that this, and other species having nearly finished up growth, should naturally demand conditions differing somewhat from others still in the middle of their growing season. I refer to such kinds as C. Warscewiczii, C. Warneri, and the earliest C. Trianæ, and by getting such kinds and grouping them together in one part of the house, their wants may be better attended to. For instance, more air may be admitted on their side and less shading used, but the water must never be reduced too soon, or the ripening process will be too quick, causing an undue check, with its attendant evils.

THE EAST INDIAN HOUSE.—Watch now closely the Dendrobiums, as several are finishing up their new pseudobulbs, and require removing to a cooler house, in which to ripen; but here again supply sufficient water for a time, or the change will be too great all at once. Sometimes the new pseudobulb will push again from its base before it has itself ceased to grow, but this secondary growth must be entirely ignored, the plant being removed to cooler quarters immediately the terminal leaf appears on the main growth. To continue the plant in heat, to endeavour to form two new pseudobulbs in succession, is but to court failure. Let the second growths, if any, shift for themselves; remove the plants as soon as ready to an airy, sunny house, where they will plump up and ripen. Many of them are now fast approaching the final stage when their removal is imperative, but it may be as well to repeat that all the species must not be so treated, but only those requiring a winter's rest before blooming in spring. The other day I saw a batch of D. Wardianum put out in the early vinery to harden off, which was indeed a splendid place for them, but with them was a plant of D. chrysanthum, which requires quite different treatment. This latter species pushes its flowers immediately the pseudobulbs are completed, and often while the foliage is still green, so that it should be allowed to remain in the Warm house until it has finished blooming, afterwards it should be removed to a cooler house, when it will soon commence to push new growth, moving along steadily but surely in the Cool house throughout the winter months. Thunias and Pleiones should also now be removed to the cooler house, where they will gain strength and complete their growth.

THE AMATEUR'S HOUSE.—The earlier part of the growing season being

so exceptionally cold and comparatively sunless was, to say the least, rather against amateur Orchid growing, and especially so in the case of those who are absent from home during the greater part of the day. When one is at home it is possible to turn almost all kinds of weather to good account, but if during absence the house has to remain as it was left, the chances of success are greatly curtailed. It may be all right so long as the weather is somewhat settled, but not at other times. Sudden climatic changes are the chief danger, and it is important that whoever is left in charge should know how and when to act in such cases. During dull weather, for example, it is ofttimes quite easy to create a good growing atmosphere inside, quite as well for the plants, if not better, than when it is so fearfully hot. In the former event, shading might not be required, and the plants would therefore get plenty of light, whilst the sun, although not actually shining, would generally warm up the temperature.

Soon after the advent of July, dull weather suddenly gave place to extreme heat and powerfully bright sunshine, and if anything should have got a little behind in growth, this will soon put it right. Shade well during the brightest part of the day, and close the ventilators as early in the afternoon as the aspect of the house, &c., will admit, at the same time thoroughly well syringing the plants. Water all dry plants the first thing in the morning with the watering-can before syringing, because afterwards they cannot be so easily detected. During the time that no fire heat is wanted, the plants will not dry up very quickly, and syringing alone will mostly suffice. But at the same time, be careful that they sometimes have a soaking, especially those in small hanging receptacles, by dipping in a bucket of water. Dendrobiums Wardianum, thyrsiflorum, densiflorum, and others, having made up, would be better if removed for a month or two to a cooler place, and might be put in the Odontoglossum department, if room existed, or a more suitable position might be, perhaps, found for them in a conservatory or covered porch, thus being partially out of doors. They would certainly take no harm if so treated during this hot summer weather for the next month or so, unless too much deprived of water. I have before now tried the earliest of the Cattleya Trianæ and others in this way, and found it answer admirably. It is not so important, however, that Cattleyas or anything else should be removed, as for the Dendrobiums mentioned.

Disa grandiflora should certainly be grown by all, for it is a lovely Orchid. The cool Odontoglossum department should grow it well, if it had the very coolest and most airy part reserved for it during the winter months. It blooms during the present month, and makes a most striking feature whenever exhibited. Pot up early in September in sandy peat, and keep moist and shady for a month or six weeks, by which time it will have recovered, after which keep moderately dry and cool until spring, and then

water liberally. Keep near the glass, but shade well, and keep perfectly free from thrip and green fly. If the tubers are large enough, it will be almost sure to flower.

DISA × KEWENSIS SUPERBA.

"TYPICAL D. × kewensis was raised at Kew from D. grandiflora crossed with D. tripetaloides, and flowered in 1893. Two years later, it was crossed again with D. grandiflora, and the result is now in flower in the cool Orchid-house. As might be expected from the parents, this new cross has larger flowers and a sturdier habit than D. × kewensis, the flower being nearly twice as large. There are four flowers on a spike 20 inches high; the side sepals are 1½ by 1 inch, rosy pink with a faint tinge of orange; the odd sepal or hood is 1 inch across, pale pink, conspicuously spotted with darker pink; petals green, with red spots. The name is a sufficient indication of the origin of the plant. There are two other secondary hybrid Disas, viz., D. × Diores, raised by Messrs. Veitch from D. × Veitchii (racemosa × grandiflora) crossed with grandiflora. It would have been better had this been named D. × Veitchii superba; the other is D. × Premier, the parentage of which is a little more complicated, its parents being D. × langleyensis and D. × Veitchii, so that its grandparents were racemosa (2), tripetaloides, and grandiflora."—W. W. in *Gard. Chron.*, 1900, xxvii., p. 54.

It is interesting to find that this new hybrid is such an improvement on D. × kewensis, but we cannot follow the line of argument adopted in justification of the name. It would have been correct for a specially fine form of the original hybrid, but the new one is a secondary hybrid of distinct origin, and should have been named accordingly. The idea seems to be that when a hybrid is re-crossed with either parent, no new blood is introduced, and therefore the offspring is only a variety of the hybrid parent. According to this, if D. × kewensis were re-crossed with D. tripetaloides, the offspring would also rank as a variety of D. kewensis. But the accepted custom of regarding such crosses as distinct is much more in accordance with fact. D. grandiflora × tripetaloides is a primary hybrid, known as D. × kewensis, but the latter re-crossed with each parent would give two quite distinct secondary hybrids, and several similar cases are already known. Secondary hybrids derived from three species cannot be named on this principle, and those derived from only two species are as essentially distinct. A plant made up of 75 per cent. of A and 25 per cent. of B cannot possibly be identical with one in which the proportions are directly reversed, nor yet with one in which they are equal. D. × Watsoni would be a suitable name for the present novelty.

CATTLEYA × HARDYANA.

THE season of this beautiful Cattleya has again arrived, and its brilliant flowers will shortly brighten up many a collection, for many plants have appeared during recent years among importations of its parents, C. Dowiana aurea and C. Warscewiczii. Artificially raised seedlings have also flowered, and from this source the stock of plants is likely to be augmented for some time to come, as the cross has been made in several collections. An unexpected amount of variation has been found to exist between the

FIG. 38. CATTLEYA × HARDYANA.

different plants, some of the forms approaching one or the other parent to such an extent as to have been sometimes considered as varieties of them rather than of the hybrid C. × Hardyana. Particularly has this been the case among forms having white sepals and petals, of which several are known, and such forms may be expected in due time among artificially raised seedlings. The history of the plant is given in our fourth volume. The form figured is from the collection of W. M. Appleton, Esq., of Weston-super-Mare, and is fairly typical.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of this Society was held at the Coal Exchange, Manchester, on July 19th, 1900, when the exhibits were not numerous. The members of the Committee present were:—Messrs. G. Shorland Ball (Chairman), Upjohn, Robson, and Weathers (hon. sec.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed a very pretty Odontoglossum × Coradinei pallidum (A.M.), O. Pescatorei Oakfield variety (A.M.), and several other distinct Odontoglossums, forming a small group, for which a Vote of Thanks was awarded.

Mrs. Briggs-Bury, Accrington (gr. Mr. Wilkinson), showed a fine flower of Cypripedium Lawrenceanum Hyeanum (F.C.).

Messrs. John Cowan & Co., Gateacre, staged a very fine group of Dendrobium Phalænopsis, for which they were awarded a Silver Medal.

Messrs. Charlesworth & Co., Bradford, showed a nearly white form of Cattleya Eldorado (A.M.).

Mr. John Robson, Altrincham, showed a very fine form of Lælio-cattleya × Admiral Dewey (F.C.), Cypripedium × Lawrebel magnificum (F.C.), and Odontoglossum crispum.

Messrs. F. Sander & Co., St. Albans, staged a small but select group, for which they were awarded a Vote of Thanks.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

Orchids generally show a falling-off in point of numbers at the July meetings, and this was the case at the Drill Hall on July 3rd, though small exhibits were fairly numerous, and included several interesting things, while Messrs. Veitch staged a large and excellent group. The members of the Orchid Committee present were: H. J. Veitch, Esq. (in the chair), and Messrs. H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. G. Fowler, E. Hill, J. Jaques, H. Little, H. T. Pitt, H. A. Tracy, C. Winn, W. H. Young, and J. O'Brien (hon. sec.).

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent four handsome Orchids, Lælio-cattleya × Henry Greenwood var. superba, a noble form (First-class Certificate), L.-c. × Wiganiæ (L.-c. × Gottoiana × C. Mossiæ), a handsome hybrid having light rose-purple sepals and petals, and a purple lip somewhat veined with maroon (First-class Certificate), L.-c. × W. aurea, differing in having the segments light buff, and the lip cream-white veined with purple, and the handsome Sobralia × Wiganiæ.

J. T. Bennett-Poë, Esq., Holmewood, Cheshunt (gr. Mr. Downes), sent

a plant of Broughtonia sanguinea bearing two good spikes, to which a Botanical Certificate was awarded.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), showed a large and handsome form of Odontoglossum crispum, in colour white, tinged with purple, and bearing one brown blotch on the lip.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent a fine form of Lælia tenebrosa, and Cattleya Mendelii rosefieldiensis, a good form in which the petals are tipped with bright mauve.

Mr. T. R. Cuckney, Cobham Hall, Gravesend, showed a series of cut spikes of the Bee Orchis, Ophrys apifera.

Dr. F. Pritchard Davies, County Asylum, Maidstone, sent Cattleya granulosa Buyssoniana, having the sepals and petals greenish yellow and unspotted.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed Cypripedium × Curtisii-præstans (Curtisii × præstans), a distinct form of intermediate character, having the dorsal sepal veined with purple on a light ground, the petals dotted with lines of purple, and the lip whitish tinged with rosy purple in front.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), showed Cypripedium × General French, a pretty white form spotted with rose-purple, said to have been derived from C. × Swanianum and C. bellatulum.

J. Wilson Potter, Esq., Elmwood, Park Hill Road, Croydon, showed Odontoglossum crispum Lady Jane, a curious variation approaching O. c. Oakfield Sunrise. The flowers were white with some brown spots on the petals, and the lip yellow with some small brown spots near the margin.

A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Humphreys), showed Eulophia euglossa, a rare West African species (*Bot. Mag.*, t. 5561.)

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a large and handsome group, to which a Silver-gilt Flora Medal was given. It contained some fine examples of Epidendrum vitellinum, Lælia purpurata, and a fine L. Digbyana, Cattleyas Warscewiczii, Mossiæ, and Mendelii, Lycaste aromatica bearing numbers of its fragrant flowers, Dendrobium velutinum, Cypripedium superbiens with fifteen blooms, a good C. Mastersianum, and other species, some good Odontoglossums, Anguloas, and other showy things, besides many fine hybrids. Of these we may mention Lælio-cattleya × Nephelia (C. Mossiæ ♀ × L.-c. × Amesiana ♂), a handsome novelty, with blush white sepals and petals, and a light rose lip, veined with purple in front of the yellow throat, fine examples of L.-c. × Canhamiana and var. alba, L.-c. × eximia, L.-c. × Aphrodite, Cattleya × Niobe (Aclandiæ ♀ × Mendelii ♂), Phaius × Owenianus (bicolor ♀ × Humblotii ♂), Epiphronitis × Veitchii, two

good examples of Spathoglottis × aureo-Vieillardii, Disa × Veitchii, D. × kewensis, D × Diores, some good hybrid Cypripediums, &c. The rare Colax viridis was also shown. and received a Botanical Certificate.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, sent Cattleya Mossiæ Reineckeana, and a larger form called C. M. Duke of Teck, also C. M. Disciplino, having lavender veined petals and a rich purple-crimson lip with white margin.

Mr. A. J. Keeling, Cottingley, Bingley, sent a fine raceme of Dendrobium calceolare, having orange-buff flowers, without the maroon blotches at the base of the lip.

Messrs. Paul & Son, Cheshunt, sent some fine spikes of a supposed natural hybrid, called Orchis × folioso-maculata, with spikes of the supposed parents. It was fairly intermediate in character, the flowers being purple, and most like the Madeiran O. foliosa, with the leaves handsomely spotted.

At the meeting held on July 17th there was a further falling-off in the number of exhibits, though some of them were of great interest, especially a new hybrid Phaius from the collection of N. C. Cookson, Esq., which gained a First-class Certificate, and a flower of Masdevallia deorsa, from Glasnevin, the first produced in this country, we believe. There was also a fine display of paintings of Certificated Orchids. The members of the Orchid Committee present were :—H. J. Veitch, Esq. (in the chair), and Messrs. E. Ashworth, T. W. Bond, H. J. Chapman, De B. Crawshay, J. Douglas, J. T. Gabriel, E. Hill, H. T. Pitt, H. A. Tracy, W. H. White, W. H. Young, and J. O'Brien (hon. secretary.)

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a most interesting little group, to which a Silver Banksian Medal was given, besides which, several things were selected for special awards. The group contained the remarkable Maxillaria scurrilis, with long and narrow spotted segments (First-class Certificate), the rare Angræcum filicornu (Award of Merit), good plants of Masdevallia maculata, Cirrhopetalum chinense, Sarcanthus peninsularis, and Tainia speciosa, the four latter each receiving a Botanical Certificate, the rare natural hybrid Oncidium × caloglossum, O. Jamiesoni, Epidendrum gracile, Geodorum pictum, the brilliant little Hexisia bidentata, a fine clump of Rodriguezia caloptera, Brassavola grandiflora, the very pretty Habenaria rhodochila, a pretty little hybrid between Masdevallia Veitchiana ♀ and M. Wageneriana ♂, Cypripedium × Rothschildiano-Lawrenceanum (Award of Merit), C. × Rothschildiano-tonsum, C. × Rothschildiano-superbiens, and C. × lævigato-purpuratum.

H. F. Simonds, Esq., Woodthorpe, Beckenham (gr. Mr. Day), staged a very pretty group, to which a Silver Flora Medal was given. It

contained two good plants of the rare Grammangis Ellisii, some good Lælia tenebrosa, Odontoglossum crispum, Dendrobium Dearei and Brymerianum, Miltonia vexillaria, Oncidium concolor and sarcodes, Epidendrum vitellinum, Cattleya granulosa, C. Mendelii, and other showy things.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent Phaius × oakwoodiensis (P. × Cooksoni ♀ × P. Humblotii ♂), a very beautiful hybrid, to which a First-class Certificate was given. The flowers were most like those of P. Humblotii in shape, with rosy sepals and petals, and a ruby-purple lip, bearing a pair of bright-yellow crests.

Colonel W. E. Brymer, Islington House, Dorchester (gr. Mr. Powell), staged a splendidly-grown specimen of Cœlogyne Sanderiana bearing fifteen racemes, which gained the Award of a Silver Banksian Medal.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent a flower of the remarkable Masdevallia deorsa, the first produced in Europe, and Odontoglossum coronarium Glasnevin variety, a yellow form in which the usual brown markings were nearly suppressed, each of them gaining an Award of Merit.

Messrs. F. Sander and Co., St. Albans, exhibited a large and very well flowered clump of Dendrobium Phalænopsis, and several good hybrid Cypripediums, including C. × Kimballianum, C. × A. de Lairesse, C. × Lady Maple, C. × Mabeliæ var. Lord Derby, and C. × Haynaldiano-Hookeræ (Haynaldianum ♀ × Hookeræ ♂), a very pretty intermediate form.

The greater part of the Society's collection of Orchid drawings was also exhibited—the exceptions being Cattleya and Cypripedium—and made a very fine display, the number being just over three hundred. The accuracy and artistic merit of the drawings were universally recognized, and the Orchid Committee recommended the award of a Silver Flora Medal to Miss Roberts, the Society's artist.

A third meeting was held on July 31st, when the exhibits were again few in number, but excellent in quality, and a specially interesting feature was the display made by the Society's collection of paintings of Certificated Orchids. The members of the Orchid Committee present were:—H. J. Veitch, Esq., in the Chair, and Messrs. T. W. Bond, H. J. Chapman. W. Cobb, J. Colman, De B. Crawshay, J. G. Fowler, J. T. Gabriel, E. Hill, H. M. Pollett, T. Rochford, F. J. Thorne, C. Winn, W. H. Young, and J. O'Brien (Hon. Sec.)

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), staged a choice little group, to which a Silver Flora Medal was given. It contained a fine form of Cattleya Warscewiczii, the beautiful C. × Whitei

with an inflorescence of four flowers, C. × Atalanta with a fine head of flowers, C. Aclandiæ nigrescens, a good C. × Hardyana, C. × Sir F. Wigan (Schilleriana ♀ × Dowiana aurea ♂), a handsome hybrid most like the former in shape, but showing some golden veining on the lip's disc, and modified characters generally (First-class Certificate), a splendidly developed example of C. × porphyrophlebia with three-flowered spike (Award of Merit), a richly-coloured form of Lælio-cattleya × Pallas, L.-c. × Aurora, and a cut spike of L.-c. × Olivia.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent cut spikes of the remarkable Angræcum caudatum, the rare Odontoglossum cruentum, and Cyrtopera plantaginea, the two latter each receiving a Botanical Certificate.

J. T. Gabriel, Esq., Streatham Hill (gr. Mr. Black), sent a good example of Phaius bicolor, to which a Botanical Certificate was given.

A. H. Smee, Esq., The Grange, Hackbridge (gr. Mr. Humphreys), also received a Botanical Certificate for the curious little Bulbophyllum Sanderianum (Rolfe), a native of Brazil.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent Odontoglossum × Hallio-crispum Crawshayanum, a very interesting and pretty seedling raised in the collection.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Lælio-cattleya × bloomfieldiensis, a form of L.-c. × elegans, a good light form of Cattleya Gaskelliana, and a plant of C. × Hardyana, bearing two remarkably different flowers on the same inflorescence, the uppermost having the disc of the lip regularly pencilled with yellow on a crimson ground, while the other had a pair of yellow eye-like blotches on the sides, as in the C. Warscewiczii parent. It would be interesting to watch the behaviour of the plant in future.

Messrs. James Veitch and Sons, Chelsea, sent Lælio-cattleya × Remula (C. Aclandiæ ♀ × L. tenebrosa ♂), a pretty little hybrid of intermediate character, to which an Award of Merit was given

Messrs. B. S. Williams and Son, Upper Holloway, sent an interesting little group, to which a Vote of Thanks was accorded. It contained a nice example of Lælio-cattleya × Henry Greenwood, Cattleya Warscewiczii imperialis, C. Leopoldi, the graceful little Platyclinis filiformis, together with Cypipediums × macropterum, × Harrisianum superbum, × Io, and × selligerum majus.

Messrs. T. Cripps and Son, Tunbridge Wells, staged a small group of the brilliant Disa grandiflora, containing about twenty-seven plants, one of which bore four flowers on the spike, and several others three.

The Society's collection of paintings of Certificated Orchids filled one of the long stages in the Drill Hall, and made a brilliant display. Room

was found on this occasion for the entire series, now numbering about 415, and we are informed that the Council, on considering the recommendation made by the Orchid Committee at the previous meeting, have decided to make the higher award of a Gold Medal to the artist, Miss N. Roberts, 72, Loughborough-road, Brixton, in recognition of the accuracy and artistic excellence of her work.

We also learn that the Orchid Committee have allowed the name of Sir Trevor Lawrence's Cypripedium × Rothschildiano-Lawrenceanum, certificated at the last meeting, to be amended to C. × Wiertzianum Burford variety. It is, however, doubtful whether the original C. × Wiertzianum was derived from the same parentage.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during August, on the 14th and 28th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on August 16th. The Committee meets at 12 o'clock noon, and the exhibits are open to inspection from 1 to 3 p.m.

An illustration of a beautiful group of Cypripedium spectabile in the garden of F. Hollins, Esq., Grey Friars, Preston, is given in the *Gardening World* for July 14th (p. 724).

At a meeting of the Linnean Society, held at Burlington House, Piccadilly, on June 21st last, a series of dried Orchids was exhibited on behalf of Dr. O. St. Brody, in which the flexibility of the plant and the natural colours were to a great extent retained. The process was described as "new," and details were not given, though we surmise that the essential principle is the rapid withdrawal of water from the plant by the application of heat.

An illustration of the interior of Mr. Oakes Ames' Cattleya house at North Easton, Mass., U.S.A., is given in the issue of *American Gardening* for July 14th, and shows a very fine series of forms of Cattleya Mossiæ and Lælia purpurata in bloom.

Cattleya Loddigesii alba is a charming pure white variety, with only a faint trace of light yellow down the centre of the lip's disc. A flower has been sent from the collection of R. H. Measures, Esq., The Woodlands, Streatham, which maintains its purity to the last.

A beautiful flower of Sophrocattleya × Hardyana is sent from the collection of Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, by Mr. Stafford. It combines well the characters of its parents, Sophronitis grandiflora ♀ and Cattleya Aclandiæ ♂, but differs somewhat from the form figured at page 209 of our last volume, inasmuch as the C. Aclandiæ character is more developed in the lip, and there are some spots on the sepals and petals.

A pretty little hybrid from Masdevallia Veitchiana ♀ and M. Wageneriana ♂ has just bloomed in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, of which we have received a flower. It has the general shape of the latter, but is larger, and the segments are longer, while the colour is orange-buff, with a trace of the characteristic iridescent hairs of M. Veitchiana.

MASDEVALLIA DEORSA.

This remarkable species has hitherto been known by a few plants which were introduced from Columbia in 1894, by Consul F. C. Lehmann, and which were said to have the anomalous character of growing head downwards, like Cattleya citrina—hence the name. One of them passed into the collection at the Royal Botanic Garden, Glasnevin, and another into that of Sir Trevor Lawrence, and the former has now produced a flower, which was sent by Mr. F. W. Moore to the Royal Horticultural Society's meeting on July 17th, and gained an Award of Merit. This flower shows that it belongs to the Coriacea group, though it differs from most others in having a descending scape, and the lateral sepals are not united into a common limb as in so many of the larger flowered species of the group, with which it can best be compared. The perianth tube is short and broad, the dorsal sepal three-quarters of an inch long, and the lateral sepals about twice as long, each terminating in a long, rather slender tail. The colour is light buff yellow, much blotched with purple-brown, especially at the back and towards the base of the lateral sepals. The petals are light-greenish yellow, and the lip papillose in front, and deep purple, but somewhat mottled with yellow behind. The leaves are ten to thirteen inches long, coriaceous, and rather narrow, and they invariably maintain their downward direction. It is an interesting addition to the group, and its anomalous habit would suggest that it grows under somewhat peculiar conditions in a wild state.

R. A. Rolfe.

ORCHID PORTRAITS.

BRASSIA BRACHIATA.—*Journ. Hort.*, 1900, xli., p. 3, fig. 1.

CATTLEYA TRIANÆ VAR. EXCELSIOR.—*Lindenia*, t. 701. VAR. REGINÆ.—*Lindenia*, t. 697.

CYMBIDIUM GIGANTEUM, Wall.—*Lindenia*, t. 700.

DENDROBIUM CRASSINODE, Bens. and Rchb. f., VAR. ALBIFLORUM.—*Lindenia*, t. 703.

DENROBIUM FIMBRIATUM OCULATUM.—*Gard. World*, xvi. (1900) p. 713, with fig.

DENDROBIUM HODGKINSONI, Rolfe.—*Bot. Mag.*, t. 7724.

EPIDENDRUM DICHROMUM, Lindl., VAR. AMABILE, Batem.—*Lindenia*, t. 699.

LÆLIO-CATTLEYA × HENRY GREENWOOD SUPERBA.—*Journ. Hort.*, 1900, xli., p. 53, fig. 12; *Gard. Chron.*, 1900, xxviii., p. 47, fig. 8 (inadvertently named L.-c. × Wiganiæ aurea, to which the text applies).

MAXILLARIA SCURRILIS.—*Gard. Chron.*, 1900, xxxiii., pp. 64, 65, fig. 13.

MILTONIA VEXILLARIA VAR.—*Garden.*, 1900, lviii., p. 28, with fig.

ODONTOGLOSSUM × ADRIANÆ, L. Lind., VAR. ARGUS.—*Lindenia*, t. 702. VAR. DECORUM.—*Lindenia*, t. 698.

ODONTOGLOSSUM × ROLFEÆ, WALTON GRANGE VAR.—*Garden.*, 1900, lviii., p. 55, with fig.

ONCIDIUM HÆMATOCHILUM, Lindl.—*Lindenia*, t. 704.

ONCIDIUM LURIDUM.—*Gard. Chron.*, 1900, xxviii., p. 62, fig. 11.

PHALÆNOPSIS AMABILIS DAYANA.—*Amer. Gard.*, xxi., p. 457, fig. 95.

SELENIPEDIUM × SARGENTIANUM, Rolfe.—*Amer. Gard.*, xxi., p. 423, fig. 87.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily).

G.F.M. Apparently intermediate between Thunia Bensonæ aud Marshalliana, and thus a form of T. × Veitchiana.

Two handsome hybrids have been received without names or particulars.

We have received from the well-known firm of Horticultural Builders and Heating Engineers, Nelson Street, Bristol, a handsomely illustrated Catalogue of Horticultural Buildings and Heating Apparatus, which includes an interesting series of photographs of Orchid houses erected by them in various localities, mostly in the West of England. The firm has made a speciality of this class of structures, and in some that we have seen the arrangements are excellent, and the culture of the plants has been carried out with the greatest success.

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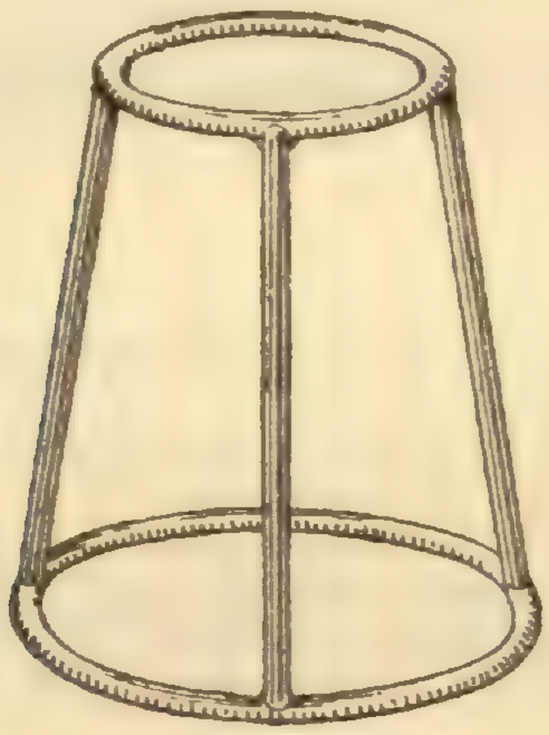

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A MEETING of the COMMITTEE, for the purpose of Adjudicating upon the Orchids submitted, will be held on August 16th, 1900, at 12 o'clock, prompt. Open to members from 1 o'clock to 3 o'clock p.m.

P. WEATHERS, Hon. Sec.,
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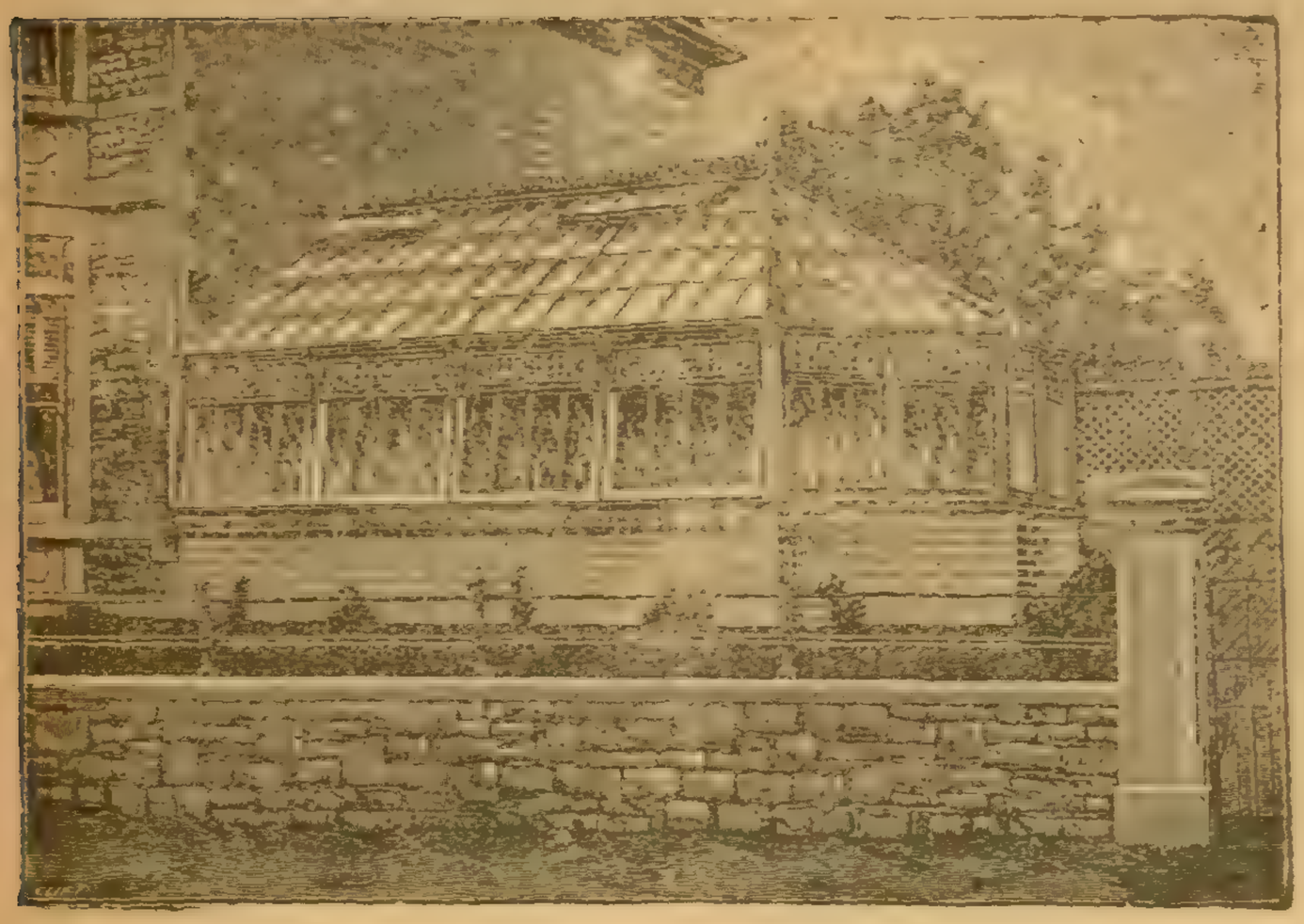

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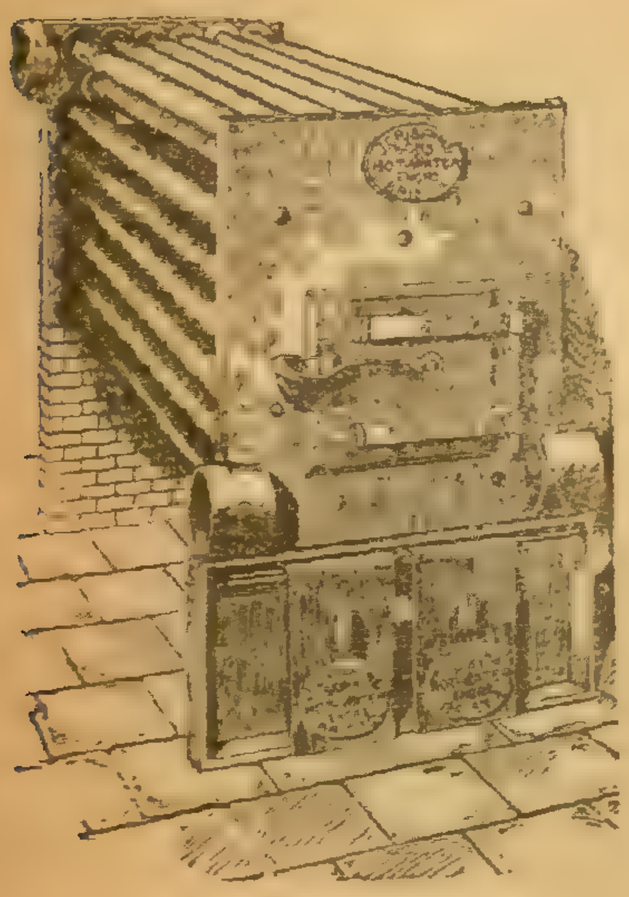

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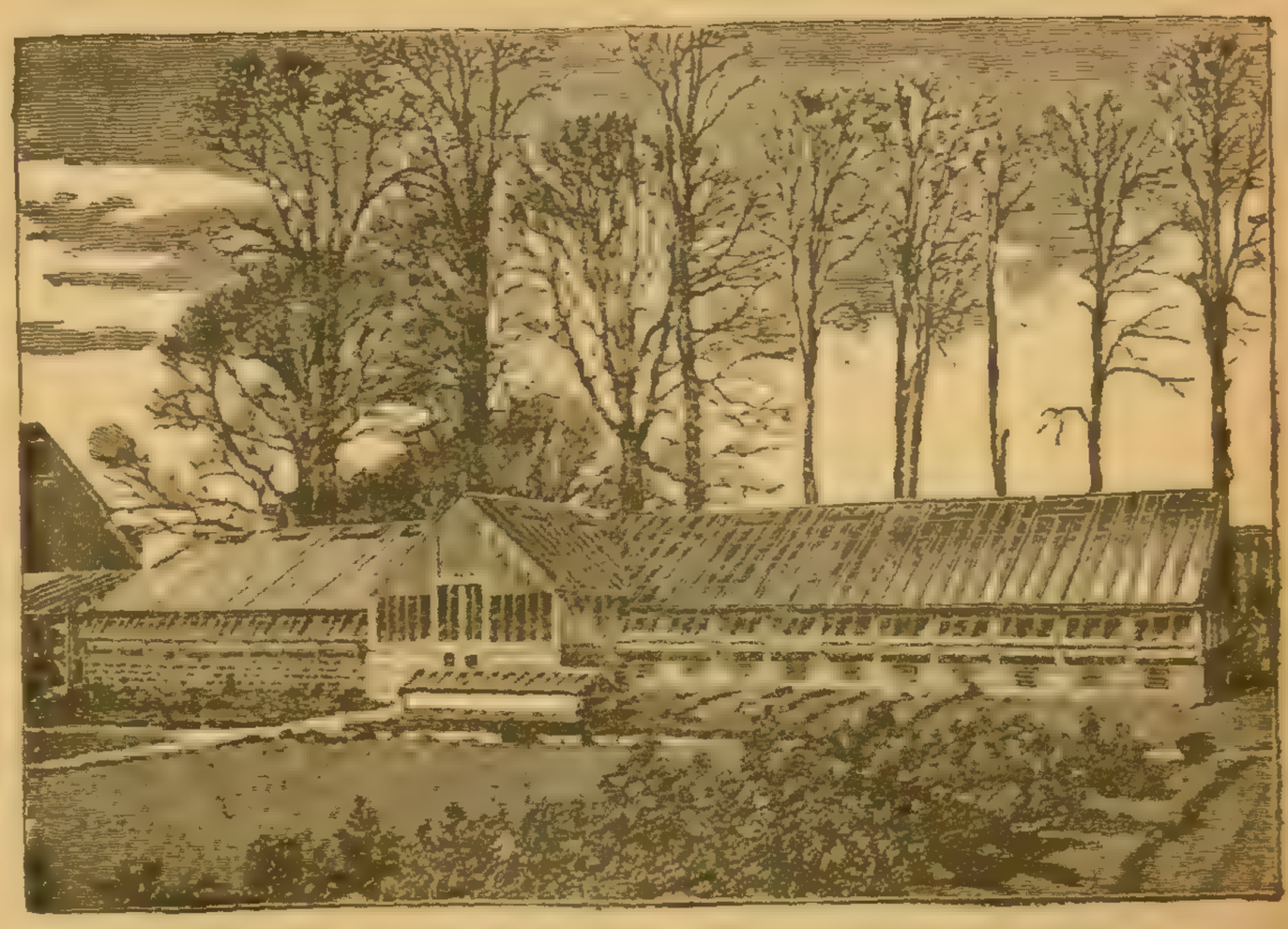

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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DIES ORCHIDIANÆ.

IT is interesting to find such a graphic illustration of the Cattleya Fly in your last number (p. 241). I have met with some growers who have never been troubled with it, and could scarcely imagine what it was like, and one I remember who thought the beast could easily be settled with a few puffs of tobacco smoke. To these gentlemen Dr. Hoisholt rendered a very useful service when he placed one of the insects under the eye of his photographic lens, and fixed his camera at the other end. May they never make its acquaintance in a more active form. Judging by several communications which appeared in the *Review* a few years ago, and the facts now detailed by Dr. Hoisholt, it is a very dangerous pest to deal with, and especially if it becomes well established in a collection before its presence is noticed, as in more than one case that I have met with. It is fortunate that the infected growths usually become conspicuous by their abnormal development before the insect is mature, or it would be very difficult to deal with, on account of its minuteness. Dr. Hoisholt watched carefully for the fly at different times of the day, but was never able to see it about the plants, though of course he may not have looked just at the right time, and apparently he did not give it much opportunity for mischief after its presence was known.

The remarks of the importer to the effect that a low temperature and a great deal of moisture will destroy the larvæ inside the growths, however, is a new idea to me, and I should think that the remedy must be almost as bad as the disease, so far as the effects on the plants are concerned. It would be interesting to hear more of the observation that "when the infected new growths are entirely covered up with chopped moss, the larvæ or pupæ within have died, probably from suffocation." The process might be less

injurious to the shoot than cutting it right off, but one would like to feel sure that it is effective. When the larva is entirely surrounded by the tissues of the plant, without access to the outside air, the presence of an additional layer of chopped moss can hardly make much difference on the score of ventilation. If the plants were imported just before the fly escaped, and it emerged to find itself shut up in a dark case for a few weeks, the result might well be disastrous to the insect, but I only offer the suggestion for what it is worth.

One of these days, perhaps, someone will send a photograph of the Cattleya disease, or rather of the fungus which produces it—if there is one, for the point does not yet seem to be fully determined. Some growers incline to the belief that it is entirely due to improper culture, bad ventilation, too much water, a low temperature in winter, or something of the kind, while others attribute an outbreak to the presence of some particular fungus, which, however, microscopists seem unable to detect. But we have known cases where an apparently healthy plant has been suddenly attacked, without any apparent reason, while others near by have escaped, and the outbreak mentioned on p. 240 seems equally mysterious in its origin. We find a plant of Cattleya × Mantinii, healthy and vigorous, apparently under correct treatment, with both its parents thriving in the same house, no drip or moisture near it; and yet for two successive years, as soon as the new bulb has finished flowering, the previous year's bulb commences to decay at the top, and in a few days the disease spreads quickly downwards. And yet no one seems able to discover the cause. There must be one, and I hope that the matter will be followed up until the mystery is solved.

Here is a cutting from a recent issue of *Indian Gardening*, which seems to have a direct bearing on the case:—

"THE PLANT DOCTOR.—This personage is now an established institution in England and other countries. Thus the *Gardeners' Chronicle*: The Royal Horticultural Society seems rolling in wealth, or very anxious to spend what it has—a correspondent says he knows an opening, viz., to provide the sinews for war to some plant-disease man, and send him to see on the spot what disease really looks like. The postal box is apt to mislead. We certainly think the time has arrived when the Royal Horticultural Society, or someone, should give an adequate salary to a competent plant-doctor, whose whole time should be devoted to the work. We are only editors, and have no time for the necessary research and cultivation, but we are swamped with inquiries and specimens."

The suggestion is not half a bad one, but who will take the initiative in the matter?

The appearance of Mr. Cookson's beautiful Phaius × oakwoodiensis again calls attention to the progress which is being made in the improvement of our garden Orchids. I was much struck with the plant when I saw it at the Drill Hall, and it shows that the raiser is following up the idea which led him to make the initial cross which gave us the handsome P. × Cooksoni. It has often been remarked that it takes several qualities to make a good garden plant, and hybridisation furnishes an opportunity to combine these qualities in one and the same individual. Some of our showiest imported species are lacking in constitution, while others, which can be grown like weeds, are not attractive enough in their flowers, but a judicious combination of the two may combine the good qualities of both, as was certainly the case with P. × Cooksoni. And even many good garden plants have characters which are capable of improvement, or defects which it is desirable to eliminate. Or it may be desirable to extend the flowering season, or to obtain a more compact habit, all of which are possible to the hybridist. In short, hybridisation furnishes the opportunity for selection, and gives rise to improved races of garden plants. The first steps of this improvement are already visible in certain groups of Orchids, and will become more apparent year by year.

It is fortunate that records are now for the most part carefully kept, for it will be interesting some day to trace the history of some of these races. And I am also glad to see that some of the failures are also being recorded, as in the case mentioned at page 202. Anything about hybridisation must necessarily be interesting, and such apparent anomalies as the failure of Epidendrum radicans as a seed parent, and of Sophronitis grandiflora as a pollen parent, while the reverse crosses are successful, seem to provoke further experiments and an inquiry into the cause, while to those who are only interested in the practical side of the question they have a utilitarian value. It would be useful if amateurs and others would record more of their experience in hybridising, for there is still so much to be learnt about it, and it is interesting to compare notes of what is being done in different collections.

The record of Mr. Moore's seedling Odontoglossums at page 240 is particularly interesting, because these plants are usually considered so difficult to raise. It seems likely that perseverance will ultimately overcome this difficulty, for we have heard more about them of late years, and it is evident that seedlings grow freely enough in a wild state. I hope that we shall hear of these plants again in due time, and of many others, too.

In my last notes I alluded to the Royal Horticultural Society's collection

of paintings of Certificated Orchids, and I noticed with pleasure that the whole collection was exhibited at the Drill Hall Meeting on July 31st, and that the Society had made the award of a Gold Medal to the artist, Miss Roberts. It was a graceful and appropriate recognition of a piece of excellent work, which I hope the Society will see their way to continue, for it is a most useful way of preserving records of the series of novelties which appear at the different meetings, and which is likely to increase rather than diminish now that so many people are engaged in the work of hybridisation.

ARGUS.

PHAIUS TUBERCULOSUS.

MR. Norman C. Cookson, the raiser of Phaius × oakwoodiensis (described at page 227) writes :—" With regard to your remark as to crossing Phaius × Cooksoni again with P. tuberculosus, I have tried this annually for many years, both ways, but so far without success, though we have had many seed pods containing seed, which, under the microscope, looked good." We are glad to hear that the experiment has been tried, and wish it had been successful, as, indeed, it may be some of these days. It would be interesting to know how Mr. Cookson grows P. tuberculosus, so as to have flowers annually. Many people complain that they cannot grow it at all, and some that have flowered imported plants once have subsequently lost them. We must either find out how to grow it, or how to improve its constitution, for it is too beautiful a plant to be lost sight of.

SALE OF ORCHID BOOKS.

THE valuable library of botanical books brought together by the late J. T. Barber, Esq., Aston-on-Clun, was recently sold by Messrs. Sotheby, Wilkinson and Hodge. Some of the most important illustrated works, which are either devoted to Orchids or include Orchids in their contents, were :— Curtis's " Botanical Magazine," from the commencement in 1787 to 1879, complete set, £91 ; Edward's " Botanical Register," 1815-47, complete set, £44; James Sowerby's " English Botany," 1790-1849, in forty volumes, £36; H. Andrews' " Botanist's Repository," 1797-1815, ten volumes, £10 5s. ; C. Loddiges' " Botanical Cabinet," 1817-33, twenty volumes, £38 ; Reichenbach's " Icones Floræ Germanicæ et Helveticæ," 1834-62, twenty volumes, £40; J. Bateman's " Orchidaceæ of Mexico and Guatemala, 1843, £11 ; and F. Sander's " Reichenbachia," 1888-98, £29.

CATTLEYA DECKERI.

A RECENT circumstance calls attention to this somewhat doubtful Cattleya, and I hope enables its history to be cleared up. In the last number of the *Dictionnaire Iconographique des Orchidées* two pretty Cattleyas are figured and described, under the names of Cattleya Patini, Cogn. (t. 25), and C. P. alba, Cogn. (t. 25A). The species is based upon Lælia Patini, Hort., and its history is thus recorded :—"This species is originally from the Colombian province of Antioquia, where it was discovered by M. Patin, Consul General for Belgium at Medellin, who sent it some years ago to Mr. Williams, Nurseryman, of Upper Holloway, London, and more recently to M. A. A. Peeters, of Saint-Gilles, Brussels." The inflorescence only is figured, but it is recorded that "the plant in its aspect and vegetative organs much resembles C. Skinneri and C. Bowringiana." The variety alba has pure white flowers, with a greenish yellow throat on the lip, and, like the type figured, flowered in the collection of M. Peeters.

Lælia Patini is a well-known garden name for the plant—I do not know how it originated, but it is erroneous in any case, for the plant is not a Lælia.

Cattleya Hennisiana is also the same plant. It was imported by Mr. J. Charlesworth, of Heaton, Bradford, through his collector, Mr. W. Hennis, and flowered in 1888. In the following year a note appeared in the *Gardeners' Chronicle* (1889, v. p. 276), to the effect that "the new Cattleya Hennisiana, which has the growth of a vigorous C. Skinneri, was in bloom; it exhibits great variety of colour and form. One plant had a spike of flowers like a richly coloured C. Skinneri, but the major part of those which have flowered (nearly a dozen in all) have been white with a faint blush tint and a lip rose-veined; the plant is apparently a winter flowerer, and is well worthy of being included in collections." Shortly afterwards, in the list of Garden Orchids I gave the preceding reference, adding (*l. c.*, p. 620): "A species closely allied to C. Skinneri and C. Bowringiana. but with smaller flowers; segments white, with a faint blush tint; lip entire, rosy-purple, with darker disc. . . . The statement 'flowers yellow', furnished by the natives, has proved erroneous."

In 1856 a curious Cattleya was figured in the *Botanical Magazine* (t. 4916), and the description was furnished by Dr. Lindley, who called it C. Skinneri var. parviflora. He remarked :—

"When Mr. Skinner last returned from Guatemala he brought with him a small packet containing the flowers of three different Orchids, which he found growing 'from the same stock.' One was Cattleya Skinneri, another was a dark crimson variety of Epidendrum Skinneri, the third, which was smaller than the first but larger than the second, he suspected to be a

hybrid between them. A plant, apparently identical with the third, is now figured from a specimen in the possession of J. Dillwyn Llewellyn, Esq., of Penllergaer. In its pseudobulbs and leaves it is little different from C. Skinneri, and it has the same short inflorescence enclosed within a bivalve spathe; but the flowers are different; not half the size, with an acute, not blunt, and emarginate lip, which is whole coloured, not pallid over all the lower half. The petals, too, are acute, not obtuse. In other respects, that is to say, in the smooth surface of the lip and in the column, no difference appears to exist.

"Is it probable that this is a wild hybrid, with the origin suspected by Mr. Skinner? We think not. It is true that it appears at first sight to be intermediate in the flowers, but there is nothing of a middle nature in the pseudobulbs, and its inflorescence is exactly that of C. Skinneri, without any tendency to assume the long-drawn form of E. Skinneri. Moreover, the lip, though acute, like that organ in the last-named species, is wholly destitute of the three lamellæ which belong to it. To this may be added, that in the petals of the plant before us there is the same tendency to become lobed which appears in C. Skinneri. On the other hand the pollen-masses appear to be abortive, a circumstance remarked by Mr. Fitch as well as ourselves.

"Although, for these reasons, we are unable at present to recognize in this instance the presence of a natural hybrid, we think it a plant the history of which requires further examination. This is to be especially noted, that the origin of the plant which has now flowered, whether or not collected by Warscewicz, as is supposed, has nothing in common with the specimen discovered in 1854 or 1855 by Mr. Skinner. The two cases appear to be wholly independent of each other."

The plants mentioned are preserved together on one sheet in Lindley's Herbarium, and confirm Lindley's remark that the two cases have nothing to do with each other; indeed he himself afterwards added in pencil to Skinner's supposed hybrid:—"Ep. aurantiacum is ♂, not E. Skin." In short this natural hybrid is the rare C. × guatemalensis, but the plant figured is evidently the one now under discussion, in a somewhat undeveloped state, and Reichenbach afterwards gave the locality as "Veragua, Warscewicz."

Curiously enough, Trinidad is another locality for the plant, Dr. Bradford having found it there. In a note with his Herbarium specimen he remarks:—"This plant was common on Naharina, in Trinidad, where I found it in fruit in January, 1845, and also in June, 1845. It flowered at St. James' very abundantly in January, 1846. I doubt, however, if any of the blooms produced perfect pollinia, although they produced fruit; perhaps, however, the seeds were not perfected. Lockhart told me that a native Cattleya existed in Trinidad, which is probably this plant. I only

found it on Naharina." Fendler also subsequently collected fruiting specimens in Trinidad, and afterwards obtained flowers by cultivating the plant. Reichenbach identified Bradford's specimens with the *Botanical Magazine* figure above-named (*Griseb. Fl. Brit. W. Ind.*, p. 620), and also added as a synonym C. Deckeri, Klotzsch.

C. Deckeri was described by Klotzsch in March, 1855, (*Allgem. Gartenz.*, xxiii., p. 81), from a plant received through Ehrenberg, which flowered in the collection of Herr Rudolph Decker, of Berlin (gr. Herr Reinecke), and on comparing the description it is quite evident that this also is the same plant.

C. Deckeri is therefore the original name of the plant, and the proper one, I believe, to be adopted, for it is clearly distinct from C. Skinneri in its smaller flowers, the dark lip without a pale throat as in that, and in flowering at a different time of year, namely in winter. It comes from a different geographical area, and the different forms known agree in essential character. It has not the globose base of the pseudobulb seen in C. Bowringiana, which also differs in most of the characters above pointed out. Some forms have a tendency to self-fertilization, and one which flowered in the collection of H. J. Ross, Esq., of Florence, in 1892, had three anthers in each of its five flowers. It is interesting at last to be able to clear up its history, and if less showy than its allies, we hope that it will find a place in representative collections.

R. A. R.

HYBRIDS IN THE BOTANICAL MAGAZINE.

It is such a rare occurrence to find a hybrid figured in the *Botanical Magazine* that the circumstance is worth noting. The August number includes the rare natural hybrid Cattleya × Whitei (t. 7727), with the following brief explanation:—"So great has been the interest shown by Orchidists in the natural hybrid here figured, that I have yielded to their wish that it should appear in the pages of the *Botanical Magazine*, as one of the few exceptions to the rule, which excludes hybrids in favour of pure species, so long as these are pressing for illustration." There are five other exceptions among Orchids which we call to mind, as follows:—

Cattleya × elegans (t. 4700), then thought to be a species, but since recognized as a natural hybrid between Cattleya Leopoldi and Lælia purpurata, and known under the name of Lælio-cattleya × elegans.

Cattleya × Lindleyana (t. 5449), also of unknown origin when figured, but now ranked as a natural hybrid between Cattleya intermedia and Brassavola tuberculata, under the name of Brassocattleya × Lindleyana.

Calanthe × Dominii (t. 5042), well known as the first artificial hybrid

which flowered, its parents being Calanthe Masuca ♀ and C. furcata ♂, and its raiser, Mr. Dominy.

Calanthe × Veitchii (t. 5375), another of Mr. Dominy's early hybrids descended from C. rosea ♀ and C. vestita ♂, and the forerunner of a beautiful race of autumn-flowering Orchids, of which it is still one of the most popular. It has since been found as a wild hybrid.

Serapias × papilaceo-lingua (t. 6255), a handsome natural hybrid from the Mediterranean region, believed to be descended from Orchis papilio and Serapias lingua.

Thus only two of these plants are of artificial origin, while two others were believed to be pure species at the time they were figured. It is not a little curious that one of the latter (Cattleya × Lindleyana) should have been carefully examined and described by Mr. Bateman, a man who could scarcely be got to look at a hybrid. Even he was puzzled about its correct genus, as may be seen from his remarks, but it would be too much to suppose that he ever guessed the cause of his perplexity.

BULBOPHYLLUM COCOINUM.

It is interesting to note that this graceful little West African species has again appeared in cultivation, a plant received from Accra which has just flowered in the Kew collection having proved identical with the one originally described and figured in the *Botanical Register* in 1837 (t. 1964). It was named by Bateman, in allusion to its fragrance, for Lindley calls it "The Cocoa-nut Bulbophyllum," and after the name adds "Bateman in litt." Its history is thus given :—"A pretty little species of this extensive genus, imported by Messrs. Loddiges from Sierra Leone. It is related to B. recurvum, tetragonum, and the others in the neighbourhood, but is readily known by the pale, flesh-coloured flowers, the serrated petals, and the concave, short lip, delicately ciliated towards its base. It flowered at Hackney in January, 1835, filling the house with the scent of a cocoa-nut, and I received it about the same time from Mr. Bateman." This fragrance is very marked in the present example, but the sepals are not tinged with pink as in the plant figured. At the present day the species would be better characterized among West African species by allusion to the very attenuate sepals. A plant which flowered at Kew in 1862, received from Sierra Leone, is marked as having "flowers white," but the present one must be described as very light green. A plant received from Liberia also flowered at Glasnevin in 1893.

R. A. R.

RODRIGUEZIA PUBESCENS.

RODRIGUEZIA pubescens is a most beautiful, autumn-blooming Orchid which always seems to have been rare in cultivation, and although re-introduced in quantity a few years ago we now seldom meet with good specimens. It is not even mentioned in the last edition of Williams' *Orchid Grower's Manual*, unless the plant mentioned as Burlingtonia Knowlesii (p. 136) be identical. The example here figured flowered in the collection of R. Brooman White, Esq., of Arddarroch, and shows what a floriferous and graceful species it is. It is a native of Brazil, and we believe was first

FIG. 39. RODRIGUEZIA PUBESCENS.

flowered by Messrs. Loddiges, in November, 1846. In November, 1851, a plant, which had been sent by some friends at Pernambuco, flowered in the collection of John Knowles, Esq., of Manchester, and received a Silver Medal from the Horticultural Society. Lindley then described it as "a wide tuft of dark green, rigid leaves, pouring forth from their bosom a profusion of bunches of snow-white blossoms." It should be grown in baskets, in the Cattleya house, and requires abundance of water when growing; and even when resting, it should not be allowed to become dry at the root,

ORCHID CULTURE AS A HOBBY.

THE other day I was looking through the collection of an amateur Orchidist, who is a very enthusiastic and highly successful cultivator, when the conversation turned upon Orchid culture as a hobby, and as it appears to the ordinary outsider. The latter individual soon recognizes that there is something peculiar about an Orchid collection, and on his first visit is often much amused at some of the features presented by these curious plants, and the strange cultural freaks attempted. Here, a few apparently almost dead sticks stuck in pots, with only a few crocks to grow in, there some strange monstrosity hanging head downwards from a block of wood, apparently holding on by a few twining roots, with only a little moss for their support, and everywhere plants suspended in pans and baskets from the roof—all so different from the contents of an ordinary greenhouse. Some of the plants he regards as mere curiosities devoid of attractive qualities, and wonders why they are grown at all. Here and there, however, are striking objects to excite his enthusiasm—flowers of marvellous shape or exquisite colour and markings, frequently both combined, with a delicious fragrance thrown in. If a horticulturist, he may try a few plants later on, and sometimes develops in due time into a highly successful grower. There is something infectious about Orchid culture.

And when one comes to think of it there is something unique about an Orchid collection, which helps to explain why the culture of these plants becomes one of the most engrossing and delightful of hobbies, and one which grows in interest year by year. Some of those who have not experienced the fascination have asked why this should be so, and what are the superior qualities which these plants possess. Some other plants are just as showy, as fragrant, and as easily cultivated—nay, more so—but they fail to awaken such enthusiasm. Orchids are pre-eminent in this respect. Their beauty, their grotesqueness of form, and their infinite variety, are all attractive. Mr. Boyle has remarked that "fancy has not conceived such loveliness, complete all round, as theirs—form, colour, grace, distribution, detail, and broad effect." But this is not all. Their very manner of growth, the cleanliness of the materials used in their culture, and the succession of varieties in flower throughout the year, are additional points in their favour. Moreover, the plants do not develop excessive luxuriance during the summer, so as to overflow the house and become a nuisance, and then shrink into insignificance during the winter; so that their very coyness is an additional charm. They go steadily on, and are interesting at every stage. Whether the new growths are appearing, the pseudobulbs plumping up and ripening, or the flower spikes beginning to push up, their progress is always followed with interest. There is a sense of continuity,

as well as a constant change, throughout the year ; even during the winter there is no blank period, for if there is little growth then there is always something coming into flower. Their modes of growth are almost as various as the structure of their flowers. No wonder they have become popular, for they have just the qualities required by those in search of a really interesting hobby, and who have the means and leisure to give them the necessary attention.

In speaking of Orchid growing as a hobby it is well to have some particular object in view, and as the collection above named is a fairly typical one, and I am pretty well acquainted with its history, it will serve to illustrate my remarks. The owner has a good general garden, and some years ago he decided to add a few Orchids to his collection, but he soon found that the arrangements of an ordinary plant-house are not altogether adapted to their cultivation. Profiting by the experience of others, he decided not to alter any existing structure—often a difficult matter, and not always successful when completed—but to build a small range of those neat little houses which were being adopted by some of the most successful growers, and thus commence, at all events, under the most favourable conditions. It was a wise resolve, and has been justified by results. A good start is half the battle in Orchid growing, as in most other things.

The houses are low, span-roofed, and run north and south, with sufficient piping to maintain the required temperature without having to drive the fires hard. The ventilation is well arranged, the top ventilators at the highest point of the house, and the side ventilators at the base of the house—neat traps opening near the hot water pipes, so that the incoming air is warmed before reaching the plants. These are far better than swinging sashes opening opposite to the side stages on which the plants are placed, because ventilation can be carried on at almost all seasons, and this is an important matter for the health of the plants. There are divisions for the usual classes of Orchids, as Cool, Intermediate, East Indian, and Mexican, the warmest ones being nearest to the boilers. The staging is double, and stands on iron pillars, the lower being solid and containing shingle or other moisture-retaining materials, and the upper open lattice work, on which the plants are placed, so that there is a free circulation of air about them. There are also open tanks for the storage of rain water at convenient places beneath the stages. The shading is well arranged, varying in thickness according to the requirements of the plants beneath, and running on rollers at the top of the house. There is a great difference among Orchids in this respect, some requiring all the light possible, short of unbroken sunlight, while others require rather ample shading. Many soft-leaved, terrestrial Orchids, for example, are very quickly injured by bright sunlight.

As to the potting and arrangement of the plants, a description would

take too much space, but the customary utensils and materials seem to be used, varying according to circumstances. A good many small plants are suspended, in shallow pans and teak-wood baskets, in convenient places, so as to get them near the light, without interfering too much with the plants on the stages, and many such situations can be found at the edges of the pathways, &c. The plants on the stages, too, are arranged according to size, so as to get a good amount of light, which is regarded as a very important matter.

The owner, though employing a gardener, gives a general superintendence over the Orchids, and attends to many of the operations with his own hands. There is nothing very peculiar about the collection; there are many similar ones throughout the country, which furnish a delightful recreation to a business man in his leisure hours. The results must be left to a future paper.

A. O.

(To be continued.)

LIPARIS LOESELII IN NORFOLK.

THE drainage of the Fen district has restricted the area of many characteristic bog plants, and a few are now believed to be almost or quite extinct there. It is interesting to learn that the very rare Liparis Loeselii still survives in Norfolk, specimens having been met with a few weeks ago by A. E. Buckhurst, Esq., M.A., Head Master of the Richmond County School. How rare it is in the county may be judged from records. In the first volume of Sowerby's *English Botany*, published in 1790 (t. 47) it is stated that "Mr. Pitchford many years ago found, in a meadow at St. Faith's, near Norwich, one single specimen, which he afterwards presented to the Rev. Mr. Lightfoot." Some years later it was also found at Royden Fen, near Diss, being included in Turner & Dillwyn's *Botanists' Guide* (p. 444) in 1805; and in this locality it is said to have been found as late as 1855, by Miss Barnard (Syme *Engl. Bot.* ix., p. 134). There is a specimen from this locality in Borrer's British Herbarium, now at Kew. The other English counties in which it has been found are Cambridge, Suffolk, Huntingdonshire, and, doubtfully, Kent, but it is extremely rare and local. Syme records its habitat as "spongy bogs. Rare, and now nearly extinct from the drainage of the Fens." The two Norfolk localities are a considerable distance apart, and the new one is in quite a different part of the country, but it is not desirable to indicate it too closely, for fear of hastening its extermination. Suffice it to say that ten specimens were seen, and that Mr. Buckhurst remarks that "Drosera anglica was growing in great profusion close by, and Epipactis palustris was very abundant—hundreds of

specimens, some very fine." The discovery is very interesting, and fortunately the plant is not conspicuous enough to attract the attention of mere casual flower gatherers.

R. A. ROLFE.

THE GENUS HUNTLEYA.

AN interesting species of Huntleya has just flowered with Herr G. Beyer, of Hamburg, and as it is a member of a small group which has been much confused, it may be useful to give a brief outline of the forms at present known. The genus is nearly allied to Bollea and Pescatorea, both of which have been partially confused with it, and it is very curious that when Reichenbach reduced the two latter (with others) to *Zygopetalum* he should have referred the species of Huntleya to Batemannia, which is far more different in structure. The species have since been transferred to *Zygopetalum*, but, like Pescatorea, which was reviewed earlier in the present volume (pp. 44, 68), it forms a quite distinct and easily recognized little group, and, unless *Zygopetalum* is to be still further enlarged, is much better treated as a distinct genus. The differences may not be very great, but similar difficulties are met with in other groups, and, in this connection, it may be well to recall a remark made by Sir Joseph Hooker respecting the reduction of Megaclinium to Bulbophyllum:—"In Botany, as in other biological sciences, if objective characters, though of little morphological value, which distinguish whole groups, are not taken into account in the formation of genera, of monocotyledons especially, the result would be chaotic agglomerations of forms under a common generic name" (*Bot. Mag.*, sub t. 7314).

The genus Huntleya was described in 1837, when Lindley remarked as follows:—"There is . . . an unpublished genus, called Huntleya by Mr. Bateman, in compliment to the Rev. J. T. Huntley, an ardent cultivator of Orchidaceous plants, . . . of which the original species was found, according to a memorandum I have received from Mr. Bateman, in Demerara, by Mr. Schomburgk, and of which another and very fine species occurs among Mons. Descourtilz's Brazilian drawings" (*Bot. Reg.*, sub t. 1991). The generic character was drawn from the latter plant, which was called Huntleya meleagris, Lindl., but the former has remained a mystery down to the present time. Lindley thus briefly described it:—"Huntleya sessiliflora (Bateman ined.); 'floribus sessilibus.' In Guiana, Schomburgk." Nothing further seems to be known about it. Reichenbach seems to have made inquiries respecting it, for, on March 26th, 1863, Bateman wrote to him from Biddulph Grange, Congleton:—"I know nothing of Huntleya sessiliflora, indeed I never even heard the name till

it was mentioned by you. There must be some mistake in the matter" (*Walp. Ann.*, vi. p. 651). Bateman's memory, however, may have failed him, for in 1866 he wrote:—"It is to be noted that Dr. Lindley never drew up any character of this genus. Professor Reichenbach founded his genus Bollea upon the plant which Lindley had already described as Huntleya violacea; the latter name ought therefore, if possible, to be retained. 'Dr. Lindley's second species—H. meleagris—. . . is certainly no Huntleya, neither is it a Batemannia, to which genus Reichenbach has referred it" (*Bot. Mag.*, sub t. 5598). Now there is a double error here, for, as we have already seen, Lindley both drew up a character of the genus, and also based it upon this very H. meleagris, which Bateman thought to exclude.

The mistake seems to have arisen from the extension of the original genus so as to include the plants now known as Bollea violacea and Pescatorea cerina. H. meleagris, Lindl., is therefore the type of the genus, and H. sessiliflora must remain a mystery. There is, indeed, in Lindley's Herbarium, a single flower ticketed, "Interior of British Guiana, Mr. Schomburgk," which one might suppose to be the missing plant, though not labelled H. sessiliflora, but I think that it must have been received afterwards, for Lindley has written on the sheet:—"Pseudobulbs like Huntleya violacea. R. S."—clearly a memorandum of Schomburgk's, and the latter species was not described until 1839. Lindley also pencilled on the sheet, "probably H. meleagris," and afterwards added the name in ink without the implied doubt, so that as the flower is not sessile, I think it cannot be the missing plant. In any case, it seems to be specifically distinct from H. meleagris, and is a plant to be re-discovered.

H. meleagris soon appeared in cultivation, for early in the following year, Lindley wrote:—"This rare epiphyte, described very briefly in the *Botanical Register*, under fol. 1991, has blossomed with Messrs. Rollissons. The flower was three inches across; the colour pale yellowish white, with a brownish purple tint towards the upper part of the sepals and petals. The lip was of the same pale colour as the base of the petals. Across the bend of the lip is stretched a broad, yellow-fringed crest, which is very remarkable."—*Bot. Reg.*, 1838, Misc., p. 19.

A year later it was figured (*Bot. Reg.*, 1839, t. 14), when Lindley wrote:—"This is at present one of the rarest of the epiphytes in cultivation, the only specimen I have seen being that now figured, which flowered with Messrs. Rollissons, in July, 1838. Its blossoms are much yellower and less tessellated with purple than in the Brazilian drawing from which the species was first described, and it is not improbable that it will be found to vary in this respect. The whole surface of the flowers had quite the appearance of being glazed. . . . This charming plant is found in

gloomy, damp woods on the banks of the Rio de Pirapitinga, in the district of Bananal. It is scentless, and flowers in June. Mr. Rollisson assures me that he received his specimen from the same country as that which produced the *Zygopetalum cochleare*, figured in this work, plate 1857; if so, I must have been misinformed as to Trinidad being the native country of the latter. I am the more disposed to believe such was really the fact, because I find a drawing of what is apparently a luxuriant specimen of *Z. cochleare* among M. Descourtilz's collection, gathered in Brazil, on the high mountains separating the province of St. Paul's from that of Minas Geraes, and known by the name of the Mantiqueiras, where it flowers in the hottest season. It thrives very well in the Orchideous-house at Tooting, where the atmosphere is kept saturated with moisture, and the temperature is in winter from 60° to 70° Fahr., and in summer from 70° to 90°. The house is, of course, well shaded from the bright rays of the summer's sun. Like other kinds of Orchidaceous plants with thick, fleshy roots, this requires a considerable quantity of water, and should be freely syringed. It is grown in a pot, but would, probably, succeed quite as well if hung up, as the greater part of those with fleshy roots do much better in that way."

Reichenbach figured the plant, under the name of Batemannia meleagris, in his *Xenia Orchidacea* (i., p. 185, t. 166, fig. 1-2), in 1856, when he mentioned some half-dozen other individuals that he had met with. In 1883 it was figured in the *Gartenflora* (xxxii, p. 198, t. 1114, fig. 2), from a plant in the Zurich Botanic Garden, and in 1889 in the Orchidophile (p. 149, with plate), from plants introduced from Brazil by M. Binot, but generally it has remained very rare in cultivation.

Two or three other species subsequently added to the genus are now excluded, but in 1872 a second genuine species appeared, though owing to the unfortunate confusion of ideas it was described as Batemannia Burtii. It may now take its proper rank.

HUNTLEYA BURTII (Batemannia Burtii, Rchb. f. in *Gard. Chron.*, 1872, p. 1099). This was described as "a very interesting and a very difficult plant. It has many leaves, much longer than a foot in the very beautiful wild specimens. The flowers resemble very much those of Batemannia meleagris—so much so that I suggested to the happy discoverer, M. Endres, they were but a variety of B. meleagris. They are brownish; the petals have a white base, and two large black spots, which sometimes appear all to occur on the base of the sepals, according to a remark made by M. Endres. The lip appears to be white, perhaps with a more pallid anterior part. The flowers would appear to be constantly longer and broader than those of the true B. meleagris, coming from Rio, Bahia, and St. Paul. Their colour is, of course, very different; the crest on the wings of that organ are not triangular,

but square. Thus I finally adopt M. Endres' view that it must be regarded a peculiar species. It was discovered so early as June 1867, in Costa Rica, by M. Endres, who proposed to name it in honour of one of his acquaintances. I have only lately had the pleasure of obtaining fresh flowers from Messrs. Veitch, who obtained it from Costa Rica. These gentlemen had, however, obtained the flower from W. Burnley Hume, Esq., who had procured the plant from them."

Shortly afterwards it was figured in the *Botanical Magazine* (t. 6003), and in 1883 also in the *Gartenflora* (xxxii, p. 98, t. 1114, fig. 1), the latter figure being from a plant which flowered in the Zurich Botanic Garden. It is much handsomer than the original species.

There is a Colombian variety, Wallisii, described by Reichenbach as Batemannia Burtii var. Wallisii (*Gard. Chron.*, 1873, p. 575). The author observed :—"It is a very interesting fact that Mr. Wallis discovered this plant in New Granada, where it appears in large quantities. Mr. Linden has, I believe, disposed of it largely in London sales, so that flowering examples may soon appear in England." In 1880 he received fresh flowers from Messrs. Veitch, and described it as a species under the name of Batemannia Wallisii (*Gard. Chron.*, 1880, xiii, p. 776), but the differences pointed out are slight. It is figured in the *Orchid Album* as B. Wallisii major (iv. t. 185), but is still very imperfectly known. According to Roezl a similar variety is found in Ecuador.

HUNTLEYA ALBIDO-FULVA was described and figured by Lemaire in 1868 (*Ill. Hort.*, xv. t. 556). It was received from Brazil in the previous year, and flowered in the establishment of M. Ambrose Verschaffelt. The author was a little doubtful about its specific distinctness, for he remarked that it was extremely near to Huntleya meleagris, and if not specifically distinct, was at least a variety wholly different in the colour of the flowers. He also pointed out that the genus was utterly different from Batemannia, to which Reichenbach had united it, and ought to be considered as distinct. The species has since been met with in Trinidad, in hills of the Aripo district, and the scanty dried materials available for comparison show some differences, which seem to confirm Lemaire's views of its distinctness.

H. LUCIDA [Zygopetalum (§ Huntleya) lucidum Rolfe in *Gard. Chron.*, 1889, v. p. 798,] is a very distinct and pretty little species which was introduced from British Guiana in 1886, by Messrs. F. Sander & Co., and flowered three years later in their establishment at St. Albans. It is a much smaller plant than its allies, but otherwise very similar in general character, and in colour. The flowers are but little over two inches in diameter.

R. A. R.

(To be continued.)

ONCIDIUM AMPLIATUM.

THE annexed figure represents an inflorescence of Oncidium ampliatum, reproduced from a photograph sent by Dr. A. W. Hoisholt, of Stockton, California. It is a well-known and popular garden plant, fine specimens of which were formerly often seen at the London and Manchester Shows, and there is a record of one large specimen, which carried fifteen luxuriant

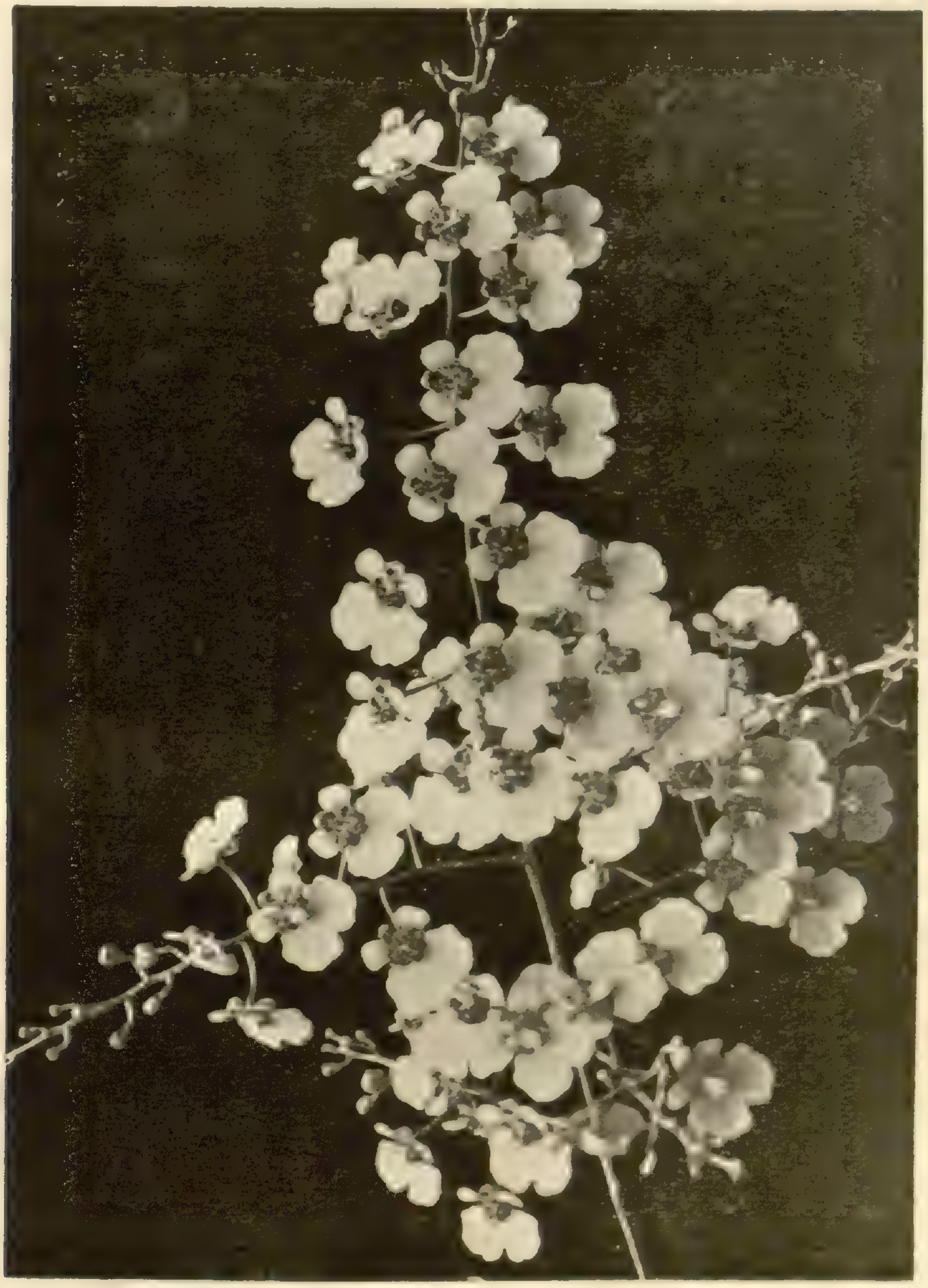

FIG 40. ONCIDIUM AMPLIATUM.

branched spikes, over a yard high, measuring in the aggregate five feet through, which must have formed a magnificent sight. The species was originally discovered by Cuming, near the Gulf of Nicoya, in Costa Rica, and was described by Lindley, *Gen. and Sp. Orch.*, p. 202, in 1832.

Afterwards, it was procured in a living state by Richard Harrison, Esq., of Liverpool, in whose collection it flowered for the first time in cultivation in March, 1835, when it was figured in the *Botanical Register* (t. 1699.). It has since been found in Guatemala, the Isthmus of Panama, the province of Santa Martha, the Rio Magdalena district, and in the Island of Trinidad, so that it is, evidently, widely diffused in Central America. In the Rio Magdalena district, it was collected by Weir, when travelling for the Horticultural Society, and afterwards by Burke, for Messrs. James Veitch and Sons. The latter found it "growing on trees overhanging streams flowing into the Magdalena, at 500-1000 ft. elevation, in partial shade." The species is variable in size in all its parts, and in 1855 Lindley remarked that there were two varieties in cultivation differing in the size of the flowers (*Fol. Orch.*, Oncid., p. 28). The finest form was afterwards figured under the name of O. ampliatum majus (*Fl. des Serres*, t. 2140-1), in 1874. In this form, the flowers sometimes exceed 1½ inches in diameter. A particularly fine example of it which flowered in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno, was figured from a photograph in 1895 (*Gard. Chron.*, 1895, xvii., pp. 172, 173, fig. 26).

CYCNOCHES CHLOROCHILON.

CYCNOCHES CHLOROCHILON seems to be the most popular species of this remarkable genus, and of late years good examples of it are frequently met with. It is interesting to note that out of three plants which have recently bloomed in the Kew collection one has produced a female flower, and it may be remembered that Messrs. Hugh Low & Co. exhibited a good plant bearing three females at a meeting of the Royal Horticultural Society in November, 1899. Unlike many others in the genus, the two sexes do not differ much, except that the female flower has a stout ovary and a short, stout column, with a triangular wing on either side of the stigma, but no anther. The perianth, however, is slightly larger and more fleshy, and the number of flowers on each inflorescence is reduced, ranging from one to three. The first female flower that I saw, and the first that I can find recorded, appeared in the collection of M. Houzeau de Lehaie, of Hyon, near Mons, Belgium, in 1891, and is specially interesting because it enabled the mystery of the two sexes in the genus to be cleared up. The species is illustrated in *Reichenbachia* (ser. 2, i, t. 39), and figures of both sexes are given in the text (p. 83), where I also outlined the characters of the two distinct sections of the genus. A glance at these figures will enable anyone who may not have seen living flowers of both sexes to realize the difference between them.

R. A. R.

ORCHIDS IN SEASON.

THE Orchids of the present season, though somewhat few in point of numbers, are particularly brilliant. Examples of the handsome Cattleya Gaskelliana and C. Warscewiczii are still flowering, and a few good examples of each make a handsome display. The C. Dowiana aurea is beginning to open, and will provide a succession of bloom for some weeks, its light yellow sepals and richly-coloured and veined lip forming one of the most striking contrasts to be found in the whole family. C. × Hardyana, of course, flowers with the two preceding species, from which it has been derived, and, like them, the flowers appear rather earlier or later according to circumstances. The fine weather of the present summer seems to have suited them and other autumn-flowering species well. Examples of C. Eldorado must also be included, and the white variety, Wallisii, is especially beautiful. Some fine plants of C. Leopoldi are now producing large heads of flowers, and, owing to the spotted segments and rich purple lip, are very effective. C. velutina is very distinct in colour, and, when well grown, very striking, and C. bicolor, which is remarkable for the absence of side lobes to the lip, is also flowering well.

Lælia Dayana is a pretty little species which is just now flowering freely, and will be followed by L. pumila and its varieties. Examples of Lælio-cattleya × Schilleriana continue to bloom, and L.-c. × elegans is commencing. The latter fine natural hybrid is rather variable in colour, and richly-coloured forms are still among the most highly prized of autumn-blooming Orchids, though two or three garden hybrids, also derived from Cattleya Leopoldi as one parent, are equally beautiful, and among them is C. × Atalanta, which flowers at about the same time. And we have now a crowd of summer and autumn-flowering Lælio-cattleyas, some of which will brighten up the house during the present month. Epidendrum osmanthum is a striking Brazilian species now in bud.

Miltonias are also to the front just now, those in flower including M. spectabilis and its richly-coloured variety Moreliana, M. Regnelii—smaller than the last and different in colour, but free flowering and very attractive—M. Clowesii, and M. candida. All of them repay any amount of trouble taken with them, and the two first are always highly esteemed. Several Oncidiums are also in flower, as the handsome O. incurvum, O. Schlimii, O. trulliferum, while several species of the popular crispum and varicosum group are also coming on. Some of these vary considerably in their period of flowering.

Cool Orchids are not numerous just now, but in the warm house Dendrobium Phalænopsis is beginning to make a grand display, which will continue for weeks. It is unrivalled at this period, and is equally useful for

cutting, as the blooms last a long time in water. Here also we note the charming little Spathoglottis plicata var. Micholitzii, Phalænopsis violacea, Eulophia guineensis, and a few Vandas and allied species, together with various botanical species.

SEEDLING ODONTOGLOSSUMS.

I WAS interested in seeing the note in your last issue about seedlings of Odontoglossum. I was pleased and surprised this year to find I had got a crop of seedlings from O. crispum × madrense on two pots. I see entries of sowing the seed on January 18 and February 1 of this year. The cross appears to have been made about November, 1898, but I did not enter it exactly. The O. crispum parent was unfortunately a rather starry form, though spotted and rather pretty—the first ever bought by me. The other parent was good. This O. madrense has been a most thriving plant with me, on a shelf near the glass in the Cool house (and upon a support), and seemed to make a most excellent growth in spite of carrying the seed pod.

E. F. CLARK.

Teignmouth.

ORCHID FIBRE.

ORCHIDS are famous for beauty and general attractiveness, but it is not generally known that they have a place in the arts that minister to the physical wants of man. But in some parts of the tropics, where Orchids abound, a very delicate fibre is prepared by the natives, which they use in the preparaton of the many ornaments those races prepare for trade with the paler races of man.—*Journ. of Hort.*, 1900, xli., p. 199.

ODONTOGLOSSUM CRISPUM LADY JANE.

A COLOURED drawing of this striking variety, which was exhibited at a meeting of the Royal Horticultural Society on July 3rd last, is sent from the collection of J. Wilson Potter, Esq., of Croydon. It was briefly noted in our report (page 250), but deserves a fuller notice, on account of its remarkable character. Like O. c. Oakfield Sunrise (noted at page 106) there is something morphologically abnormal about the petals, though in other respects the two forms are quite dissimilar. The sepals are pure white and unspotted, but the petals bear numerous light red-brown spots, if they may be so described, which are more or less confluent into broad lines or streaks, and extend almost from base to apex, giving the flower a most remarkable appearance. Generally speaking, when one set of organs

is spotted and the other not, the characters are just reversed, and almost invariably the spotting on the petals is less in amount than on the sepals. And there is the further difference in this case that the spots are quite different from those of normal forms, and might almost as well be described as interrupted lines. The lip is rather small and broad, and the yellow disc disproportionately large, while the margin bears very numerous light brown dots all round. These characters indicate a partially peloriate condition, and we hope to be able to examine both the remarkable forms named on some future occasion.

PERISTERIA ELATA.

THE appearance at the last meeting of the Royal Horticultural Society of a fine specimen of Peristeria elata, from the collection of W. W. Astor, Esq., of Maidenhead, again calls attention to this remarkable Orchid. The plant in question was splendidly grown, bearing eight fine racemes, and gained a Cultural Commendation. It also recalls a specimen exhibited in September, 1898, by Mr. Owen Thomas, Royal Gardens, Windsor, which also carried eight fine racemes, and an aggregate of over three hundred flowers. On that occasion a First-class Certificate and a Silver Flora Medal were awarded in recognition of its exceptional culture.

The species first flowered in this country, in 1831, in the collection of Mr. Richard Harrison, of Liverpool, and was figured in the *Botanical Magazine* (t. 3116), when its history was thus given by Sir William Hooker:—

"In the year 1826, Henry Barnard, Esq., of Truxillo, in Peru, communicated to Richard Harrison, Esq., of Liverpool, a bulb of a remarkable parasitical Orchidaceous plant which he had found in the neighbourhood of Panama, and the flower of which is there looked upon with no little consideration, and known to the inhabitants by the name of "*El Spirito Santo*.' The reason for this appellation was quite obvious on the blossoming of the plant, which did not occur in Mr. Harrison's stove until the summer of the present year, 1831, when the centre of the flower exhibited a column which, with its summit, or anther, and the projecting glands of the pollen masses, together with the almost erect wings, bore a striking resemblance to a dove, the emblem of the Third Person in the Trinity. El Spirito Santo was therefore applied by the same people, and in the same religious feeling, as dictated the naming of the '*Passion*-flower.'

"So soon as the curious flowers were fully expanded, Mr. Harrison, with his usual kindness, forwarded me a specimen, together with an excellent drawing from the pencil of Mrs. Arnold Harrison. This is, in part only, copied to suit the plate of the *Magazine*, and therefore but imperfectly

represents the stately appearance of the original. For this species is no less remarkable among Orchidaceous plants for its structure, than for its large and copiously flowered spike.

"Being unable to find any genus of the Orchideæ which corresponds with it, I have ventured to give it a generic name significant of the dove-like appearance of the column of fructification."

It is probable that there is some mistake in the above locality. The habitat, "Panama," does not seem to have since been confirmed, and it is probable that Truxillo in Venezuela, opposite to the south-east corner of the Maracaybo Lagoon, not Truxillo in Peru, is the place intended, and that the plant was really collected in the vicinity, It is to be noted that at this very spot, at an altitude of 6,000 feet, Wagener subsequently collected the plant, and it is very likely that Sir William Hooker himself added the words "in Peru," knowing that there was a place of that name there. Purdie also collected the plant "on dry ridges" at Muzo, in the province of Santander, Colombia, nearly six hundred miles south-west of Truxillo. Seemann does not include it in the list of plants collected on the Isthmus of Panama, and although he mentions it in his introduction (*Bot. Herald*, p. 71) it is clearly only a reference to pre-existing records, which in face of the above facts must rank as doubtful. The above seems to be practically all that is recorded about its habitat.

It is a very remarkable plant, but we do not remember to have often met with it in Orchid collections. Messrs. Veitch, however, in their *Manual* (ix., p. 128) remark:—"Like Phaius grandifolius, Dendrobium nobile, and other popular kinds, it is one of the few Orchidaceous plants generally cultivated in the stove without being especially associated with other Orchids, its stately habit and curious, fragrant flowers rendering it popular among amateurs who possess the needful accommodation for its culture." And they add the following cultural note:—

"Peristeria elata is usually potted early in spring in a compost of two thirds well-rotted turfy loam, and one-third fibrous peat, with the addition of some thoroughly decomposed cow-manure. Ample drainage should be secured by broken crocks to about half the depth of the pot, and the compost filled in above this to within half an inch of the rim. The pseudo-bulbs should be placed on the surface of the compost, which should then be covered with Sphagnum moss. When growth commences, the plants should receive a liberal supply of water, which should be continued till the large, new pseudobulbs are mature; the supply may then be diminished to so much as is sufficient to prevent the pseudobulbs from shrinking during the winter months. As much air and light as is safely practicable should be afforded at all seasons, shading being used only during the earliest stages of growth, and on hot, bright days, to prevent the foliage being scorched.

CYPRIPEDIUM SPECTABILE AT HOME.

THE following extract is taken from an article entitled "Some Orchids of Eastern Vermont," by Alice E. Bacon, in a recent number of *Rhodora* (vol. ii. pp. 171, 172), and supplements the notes given at page 243 of our last issue. She is writing from Bradford, Vermont, in the Connecticut Valley, and remarks:—

"About ten miles from here is a large swamp of several acres, which is literally crowded with gigantic specimens of Cypripedium spectabile; it has been practically undisturbed for generations, being far from tourist routes, and known only to the country people as a species of Valerian, and a specific for nervous troubles. Several hundred stems were gathered last year without any perceptible effect on the mass; many of the flowers were double—that is, with two inflated lips to one calyx, and the stems were from 2 to 3 feet high."

Nearer the village, she says, is situated a swamp which was literally covered with flowering plants of the same during the last week in June, and a little earlier fine specimens of C. pubescens and C. parviflorum were gathered there. On a hill near by, an abundance of C. acaule was in flower at the end of May.

We do not understand the phrase relating to double flowers, unless it means two flowers at the apex of one shoot, in which case the "calyx" would mean the two bracts.

PLEUROTHALLIS LEUCOPYRAMIS.

THIS graceful and deliciously fragrant little species has again appeared in cultivation, plants having been imported by Messrs. John Cowan & Co., of Gateacre, with some Masdevallias, and one which has just flowered at Glasnevin, with Mr. F. W. Moore, proves identical on comparison. It is believed to be a native of Costa Rica, and was originally described by Reichenbach in 1877 (*Linnæa*, xli., p. 47), and afterwards figured by the same author (*Xen. Orch.*, iii., p. 14, t. 210, fig. 1). It flowered in the collection of W. Wilson Saunders, Esq., at Reigate. It is a dwarf species, with stems about 2½ inches long, and the leaves about equal or a little longer, oblong in shape, light green above, and blotched all over underneath with light dusky brown. The flowers are white, about four lines long, and borne in racemes of about eight or ten each, while their fragrance resembles that of Narcissus, a character which I have not noticed before in the genus. Altogether it is a most interesting little plant.

R. A. R.

TRICHOPILIA SUAVIS.

TRICHOPILIA SUAVIS is one of the handsomest species of the genus, and when grown as in the accompanying illustration of a plant in the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, is certainly very effective. It is grown in a six-inch pot, suspended from the roof, and when photographed bore twenty flowers. It is a native of Costa Rica, where it was discovered about the year 1848, by Warscewicz, on the Chiriqui volcano, at an altitude of 5,000 to 8,000 feet. It first flowered in cultivation in 1851. According to E. Morren, the plant was found growing on oaks, and on a tree called Cupania glabra, at from 20 feet to 40 feet from the

FIG. 41. TRICHOPILIA SUAVIS.

ground, never lower down, and if the trees fall down from accident or old age, the Trichopilias on them languish and die. During the dry season, from November to April, there is neither rain nor dew, and the wind is often very violent, but during the rest of the year both rains and dews are copious and frequent. A light position in the Intermediate house is usually considered the most suitable, good drainage and careful watering being also essential. When well grown, and the bulbs properly matured, it is very floriferous, and its fragrant, white blossoms, with rose-pink spots on the lip and a yellow throat, are produced in early summer.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

No fire heat should be required for the Cool department this month. A large amount of air should be admitted, particularly during the cool, dewy nights, and the Odontoglossum crispum will then be found to grow in a remarkable manner. Water and damp pretty freely still, though much less moisture is demanded than for the two or three preceding months, when the days were longer and the atmosphere drier.

The Intermediate and the Warm houses will now require a little fire heat regularly during the nights, and a slight amount during the day, more or less according to the weather, though special care should be taken not to use more than is absolutely required for the maintenance of the desired temperatures. A little heat just at present is certainly very beneficial, even though the thermometer may stand high enough without, because it promotes circulation and prevents an over stagnant atmosphere; and thus assists in the ripening of the new growths, which should now take place very largely among those species which have arrived at this stage. At the same time air should be admitted freely whenever possible, and this treatment will give the plants the hardiness and healthiness necessary to carry them successfully through the winter.

Regarding the correct temperature, it is this month rather difficult to give any bare figures. During hot, bright weather the temperatures given for summer may safely be approached, but with more air and a less humid atmosphere, whilst at other times, and at nights, of course, a considerable reduction may and should take place.

As to shading, much less is now necessary, in fact some structures may scarcely require any, or, if any, only for a very short period. Others, which are more fully exposed, may still require a good amount for the whole of the present month, and for some tender species, such, for instance, as Phalænopsis, well into next month in bright weather.

The present month is an extremely interesting one to the enthusiastic Orchidist. It is a time of an important change in the lives of the plants, necessitating in a number of instances a vast difference in their treatment. The flowering period is an interesting time, but for an enthusiastic grower, I think that the early part of the growing season is even more so, and certainly a more anxious one, because by the appearance of the new growths, their strength, healthiness, &c., a practised eye can pretty clearly foretell the results. Not less interesting, I think, is the present period, for the results are here, and whether good, bad, or indifferent, the treatment now given will have great influence, firstly on their flowering, and afterwards on their growth.

The great majority of the winter and spring blooming Dendrobiums will by this time have completed their new pseudobulbs, and should be removed to a light, airy, Cool house, where they should remain for this and the following month, giving only a little fire heat in damp weather, and at night, to assist them to mature. Afterwards it is generally necessary to remove many of them back for the winter into what may be termed an intermediate temperature, for a few only of the Dendrobes care to go down to 40°, like D. Wardianum and some few others, which will be named in a future Calendar. The majority prefer to winter at 50°, or a little more or less. But this is looking forward: what we have to do at the present time, is to mature the pseudobulbs, and for this the removal from their growing quarters is indespensable. Still continue to water at the root pretty freely for some time to come in order to maintain plumpness.

Cattleyas and Lælias, Oncidiums, Odontoglossums, and other similar kinds which have made up their growths should likewise be matured, and could be treated like and with the Dendrobes for a couple of months, but it is not quite so important to remove these, as they can generally be accommodated successfully by a little manipulation in their own departments.

There is a point here on which I have before advised, and will do so again, because I frequently see that the matter is still a stumbling-block to some growers. If a pseudobulb has finished up, and directly commences to start new growth from the base, do not continue to grow that plant for the benefit of the second growth, because it ends in failure. Let the plant receive its needed rest, at the proper season, together with others which have no second break, allowing nature to care for the new and immature growth, which it will do successfully.

Cattleya Dowiana, C. D. aurea, and C. labiata more than any others are apt to rot after blooming, and this rot may assume serious proportions if the atmosphere should be stagnant at the time the blooms are cut. They go at the apex of the pseudobulb and the new leaf soon drops, and even should a part of the pseudobulb be saved it is a most serious catastrophe. Any hybrid having either of the above as parent should be specially looked to at this period. The only method of preventing it is to remove the bloom sheath entirely, by pulling it clean off immediately the blooms are cut so that nothing remains but the stump of the spike, which will die off harmlessly. The sheath will pull away easily.

Odontoglossums of the crispum section, and allied growing kinds, should still be looked over, so as not to let their proper potting time pass by, as, should they require it, they may still be done very successfully. Avoid too large pots, and water newly potted plants with care during the winter.

There are usually but few blooming Orchids during this month. A few good things, however, are to be had. Cattleya × Hardyana and its varieties

are not the least of these, as well as several other hybrids claiming either C. Warscewiczii or C. Dowiana aurea for parents. C. Warscewiczii sometimes take the rot above mentioned, though but rarely, but it is well in the case of choice hybrids from it to remember the fact. Then, again, there is Cattleya Rex, some varieties of which are very showy. Like the preceding, it requires nothing more than the ordinary Cattleya house conditions to grow it well. Then there is C. Eldorado and its charming varieties, and the very beautiful C. superba, always welcomed at this season. They should all have the warmest portion of the last-named department, where they generally do well, if given plenty of water when growing, but should they fail they must be taken to the East Indian house. C. Loddigesii and C. Harrisoniana are also invaluable. These two species, I find, prefer the cooler Cattleya house treatment, and should they fail in a general house of Cattleyas I would advise a cooler position. Then there are other long-bulbed kinds, like C. Leopoldi, C. granulosa, and C. bicolor, which all help to make a show at this quiet season.

The flower spikes of the various autumn blooming Oncidiums, such as O. crispum, O. Forbesii, and O. varicosum, are now rapidly pushing. If any of these have been growing in the coolest house, and should by any reason be late in growth, they will now be better if assisted forward by placing them in the Intermediate house. The early part of November is plenty late enough for these to open, and any not likely to bloom by then should receive this assistance. To keep the young spikes perfectly free from thrip and aphis is of the utmost importance.

THE AMATEUR'S HOUSE.—If the frame has been employed for the Odontoglossums during the summer, they will still enjoy such treatment until the first week or two in October, when it will be safer to remove them to the house containing the general collection, giving them the coolest end. Still give plenty of air and shade as much as required, but be pretty careful now as regarding water, for these frames generally lie damper than a house, and less watering is required. Collect all those which have completed their new pseudobulbs together so that they may be kept somewhat drier. All others which are still growing should have the treatment before recommended, to induce quick growth as far as possible. Of course, less frequent overhead syringing will now be needed. Once a day will probably be sufficient, the best time being from 8 to 9 o'clock in the morning. Fire heat will probably not often be required during the day, but should be now had every night, little or much according to the weather, and this will prevent the temperature from getting too cold and stagnant. A high temperature is quite unnecessary, and indeed injurious; from 55° to 60° will answer well during the night, going up by day according to the outside conditions.

If newly imported Orchids are purchased during the autumn and winter, they should be given every encouragement to establish themselves quickly, two essentials being a good position and a fair supply of moisture. A good plan is to put them into small pots quite temporarily, adding a little sphagnum round their roots to hold them firm. The moss should be kept moist, and they will soon commence to root into it. In the following spring, when nicely established, they may be permanently potted up into whatever receptacles are the most suitable. They then take to the new compost while it is quite fresh, which is better than potting them up directly they are received.

ORCHIDS AT THE ROYAL HORTCULTURAL SOCIETY.

THE August meetings of the Royal Horticultural Society seldom produce a big display of Orchids, but at the one held at the Drill Hall, Buckingham Gate, Westminster, on August 14th., these plants were even fewer than usual, numbering only five, from four different exhibitors. The Orchid Committee was represented by: H. J. Veitch, Esq. (in the chair), and Messrs. H. J. Chapman, De B. Crawshay, J. Douglas, J. G. Fowler, E. Hill, J. Jaques, H. Little, A. H. Smee, H. A. Tracy, and W. H. Young.

E. Bostock, Esq., Tixall Lodge, Stafford (gr. Mr. Gill), showed a good Cattleya Harrisoniana violacea, bearing nine richly-coloured flowers.

Sir William Marriott, Bart., Down House, Blandford (gr. Mr. Denny), showed the handsome Lælio-cattleya × Clonia (L.-c. × elegans × C. Warscewiczii.)

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed the pretty natural hybrid Cattleya × Patrocinii, and C. × Warnero-Bowringiana, the latter having rather small, pale purple flowers, with a darker-coloured throat to the lip.

M. Florent Claes, Brussels, sent a rather curious Odontoglossum called O. crispum De Sadeleri. The flower is nearly circular in shape, and the segments whitish in the centre, tinged with faint yellow at the margin, and spotted with brown.

AT the meeting held on August 28th, Orchids were rather more numerous than on the previous occasion, and of great merit, no less than six awards being made, namely, one First-class Certificate, three Awards of Merit, and two Cultural Commendations. The members of the Orchid Committee present were:—H. J. Veitch, Esq., in the chair, and Messrs. H. J. Chapman, De B. Crawshay, J. Gurney Fowler, E. Hill, H. Little, H. M. Pollett, F. Sander, A. H. Smee, F. J. Thorne, H. A. Tracy, W. H. Young, and J. O'Brien (Hon. Sec.).

Mrs. Briggs-Bury, Bank House, Accrington (gr. Mr. Wilkinson), sent Cattleya × illuminata, a very handsome hybrid of unrecorded parentage, to which a First-class Certificate was given. It bore a general resemblance to C. × Atalanta; the sepals were honey-yellow, slightly tinged with rose; the petals broader, similarly coloured, with a trace of light purple veining; and the lip deeply trilobed, with the side lobes folded over the column, blush pink, and tipped with purple-crimson at the apex, and the front lobe broadly expanded, somewhat crisped, and of a glowing purple-crimson.

W. W. Astor, Esq., Cliveden Park, Maidenhead (gr. Mr. Bacon), sent a noble specimen of the Dove Orchid, Peristeria elata, bearing eight fine spikes of its remarkable, wax-like, fragrant flowers, which always excite remark on account of the column and side lobes of the lip resembling a dove with expanded wings. It was an example of splendid culture, which was recognized by the award of a Cultural Commendation.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent Cypripedium × Milo, Westonbirt variety, in fine condition, the upper sepal being white, with dotted purple lines, and the petals shining red-brown; the handsome Sobralia xantholeuca, a very fine example of Dendrobium formosum giganteum, three handsome spikes of Dendrobium Phalænopsis, ranging from eighteen to twenty-two expanded flowers on each (Cultural Commendation), and Odontoglossum × Adrianæ Countess of Morley, a beautiful, cream-white form, bearing large, chocolate-coloured blotches on the sepals, smaller and fewer ones on the petals, and one large, dark brown blotch and some small spots on the handsomely fringed lip (Award of Merit.)

W. C. Walker, Esq., Winchmore Hill (gr. Mr. Cragg), sent a good Cattleya bicolor, to which an Award of Merit was given. It was fairly typical in character, the sepals and petals being bright green, and the front lobe of the lip bright rose-purple.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), showed a plant of Lælio-cattleya × Schilleriana, called Glebelands variety, having flowers of good shape, white tinged with lilac, and the front lobe of the lip bright rose-purple, with a narrow lavender-coloured margin.

Sir William Marriott, Down House, Blandford (gr. Mr. Denny), sent a plant called Cattleya × armainvillersiana (C. Mendelii × Warscewiczii) having white sepals and petals, tinged with pale lilac, and the front lobe of the lip and the margin of the side lobes purple.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, sent a plant called Lælio-cattleya × elegans, var. J. Davis, to which an Award of Merit was given. It is a fine form, having pale, rosy lilac sepals and petals, the tube of the lip white, and the front lobe bright rose-purple.

Mr. Ed. Kromer, Roraima Nursery, Croydon, sent a flower of Cattleya

Dowiana Jenseniana, a very large and handsome form, having primrose yellow sepals and petals, with some purple marbling at the apex of the latter, and a rich claret purple lip covered with the usual golden veining.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, sent a good specimen of Cycnoches chlorochilon, two good Lælio-cattleya × elegans, Cattleya Eldorado, and the fine C. Eldorado splendens.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, Buckingham Gate, Westminster, during September, on the 11th and 25th respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

Meetings of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on September 6th and 27th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m. There was no meeting held during August, as inadvertently announced in our last issue.

A fine dark form of Lælia purpurata of the L. p. Backhousiana class is sent from the collection of G. F. Moore, Esq., of Bourton-on-Water, Gloucestershire. The lip is very dark, the petals well suffused with rosy purple, and the sepals lighter in colour.

Two sprays of the pretty little Epicattleya × matutina (Cattleya Bowringiana ♀ × Epidendrum radicans ♂) are sent by Messrs. James Veitch and Sons, of Chelsea. It has the general shape of the latter, with the flowers enlarged, the lip much broader, and the colour a pretty bright rose, which modifications alone show the influence of the seed parent. It is a very charming little hybrid, and was described at page 110 of our fifth volume.

A very curious flower of Lælia crispa is sent from the collection of H. Heywood, Esq., The Warren, Birkdale, near Southport. The lip is broken up into three, two of the divisions forming perfect separate lips, and the third being united to the inner margin of one of the sepals, this organ thus being half sepal and half lip. The plant is an imported piece, now flowering for the first time, and the spike of nine flowers has one other in this condition, the other seven being normal. The column is less abnormal than is usually the case in these peloriate flowers.

A very pretty form of Lælia-cattleya × elegans is sent from the collection of the Rev. E. Baddeley, Long Marston, Yorkshire. It is much

like the variety Turneri, but the front lobe of the lip is more sessile, and the sides of the tube are pure white, tipped with purple. The rest of the flower is very richly coloured.

Flowers of the handsome Cypripedium × Sandero-Curtisii are sent from the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, and are fairly intermediate between the two parents. Also a hybrid from C. Chamberlainianum which may have C. Spicerianum for the other parent.

A very pretty form of Odontoglossum crispum is sent from the collection of E. F. Clark, Esq., of Teignmouth, having a few small spots about the centre of the sepals, fewer on the petals, and the lip heavily marked with purple all round the yellow crest.

A good flower of the pretty little autumn-flowering Miltonia vexillaria var. rubella is also sent from the same collection. It is like a miniature edition of the type, but flowers at a different period.

THE HYBRIDIST.

Lælio-cattleya × Hurstii.

A VERY pretty hybrid has just flowered with Mr. C. C. Hurst, F.L.S., Burbage, Hinckley, of which we have received a flower. According to the record it was raised from Cattleya Skinneri crossed with the pollen of Lælia purpurata, and from seed sown in 1894. The flower bears evidence of such descent, as it has the general shape of the latter, reduced to rather over four inches in diameter, with the sepals and petals of a bright-rose purple, and the throat and side lobes of the lip almost blackish purple, with the apex and base rather paler. The pollinia are of the usual intermediate character. The vegetative organs we have not seen. It is of good shape, very brilliantly coloured, and should develop into a good thing when the plant becomes strong. We have not yet many hybrids from Cattleya Skinneri.

Lælio-cattleya × F. W. Wigan.

We learn that the above is the correct name of the handsome plant described at page 228 of our last issue. The name must have been wrongly copied by accident.

ORCHID PORTRAITS.

Angræcum filicornu.—*Gard. Mag.*, 1900, p. 491, with fig.
Cattleya × F. W. Wigan.—*Journ. Hort.*, 1900, xli., p. 121, fig 33.

CATTLEYA × VESTALIS.—*Gard. Mag.*, 1900, p. 555, with fig.

CATTLEYA × WHITEI, Rchb. f.—*Bot. Mag.*, t. 7727.

CYPRIPEDIUM × ABESSA.—*Amer. Gard.*, xxi., p. 489, fig. 101.

CYPRIPEDIUM × CLINKABERRYANUM.—*Amer. Gard.*, xxi, pp. 536, 537, fig. 112.

CYPRIPEDIUM PHILIPPINENSE.—*Amer. Gard.*, xxi., p. 536, fig. 111.

CYPRIPEDIUM × SANDER-SUPERBIENS.—*Journ. Hort.*, 1900, xli., p. 149, fig. 40.

DENDROBIUM × VENUS.—*Gard. Chron.*, 1900, xxviii., pp. 94, 95, fig. 24.

LÆLIO-CATTLEYA × CANHAMIANA ALBA.—*Journ. Hort.*, 1900, xli., p. 97, fig. 26.

LÆLIO-CATTLEYA × HERMIONE.—*Journ. Hort.*, 1900, xli., p. 193, fig. 51.

MAXILLARIA SCURRILIS.—*Journ. Hort.*, 1900, xli., pp. 97, 99, fig. 28; *Gard. Mag.*, 1900, p. 491, with fig.

ODONTOGLOSSUM × HALLIO-CRISPUM VAR. CRAWSHAYANUM.—*Gard. Chron.*, 1900, xxviii., p. 102, fig. 26.

ODONTOGLOSSUM RAMOSISSIMUM.—*Journ. Hort.*, 1900, xli., pp. 122, 123, fig. 34.

ODONTOGLOSSUM × WENDLANDIANUM CRAWSHAYANUM.—*Gard. Mag.*, 1900, p. 521, with fig.

PHAIUS × OAKWOODIENSIS.—*Gard. Chron.*, 1900, xxviii., pp. 92, 93, fig. 23; *Gard. Mag.*, 1900, p. 491, with fig.

PHALÆNOPSIS LUEDDEMANNIANA, Rchb. f.—*Rev. Hort. Belg.*, 1900, p. 169, with plate.

PLATYCLINIS VALIDA.—*Garden*, 1900, lviii., p. 127, with fig.

PLEIONE LAGENARIA.—*Journ. Hort.*, 1900, xli., p. 188, fig. 50.

SCHOMBURGKIA SANDERIANA.—*Journ. Hort.*, 1900, xli., pp. 98, 99, fig. 27.

VANDA CATHCARTII.—*Rev. Hort.*, 1900, p. 452, with plate.

VANDA SANDERIANA.—*Amer. Gard.*, xxi., p. 507, fig. 106.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily).

G. B. Cattleya Leopoldi, Dendrobium sanguinolentum, Huntleya albido-fulva, Oncidium Batemannianum, and Cœlogne sp., not recognized.

E. W. A geographical name takes the termination ensis (masculine or feminine), ense (neuter), and is written with a small initial letter.

J. S. Oncidium varicosum.

W. C. Eulophia guineensis.

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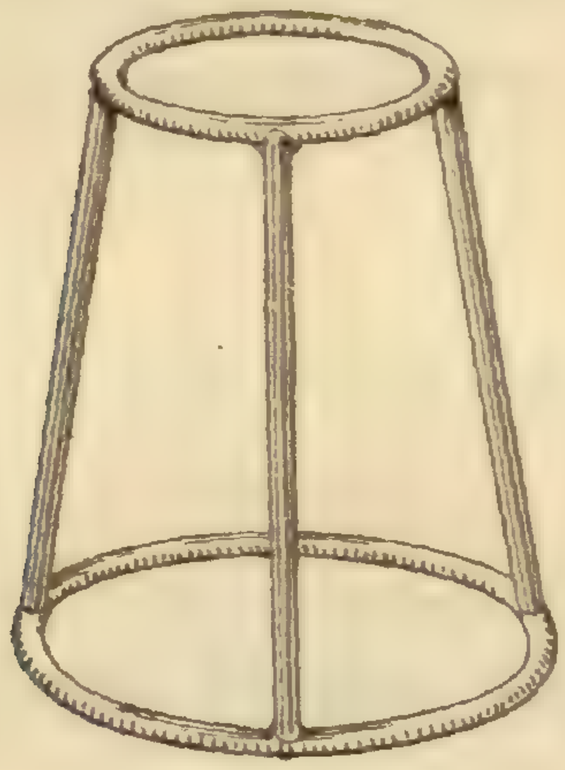

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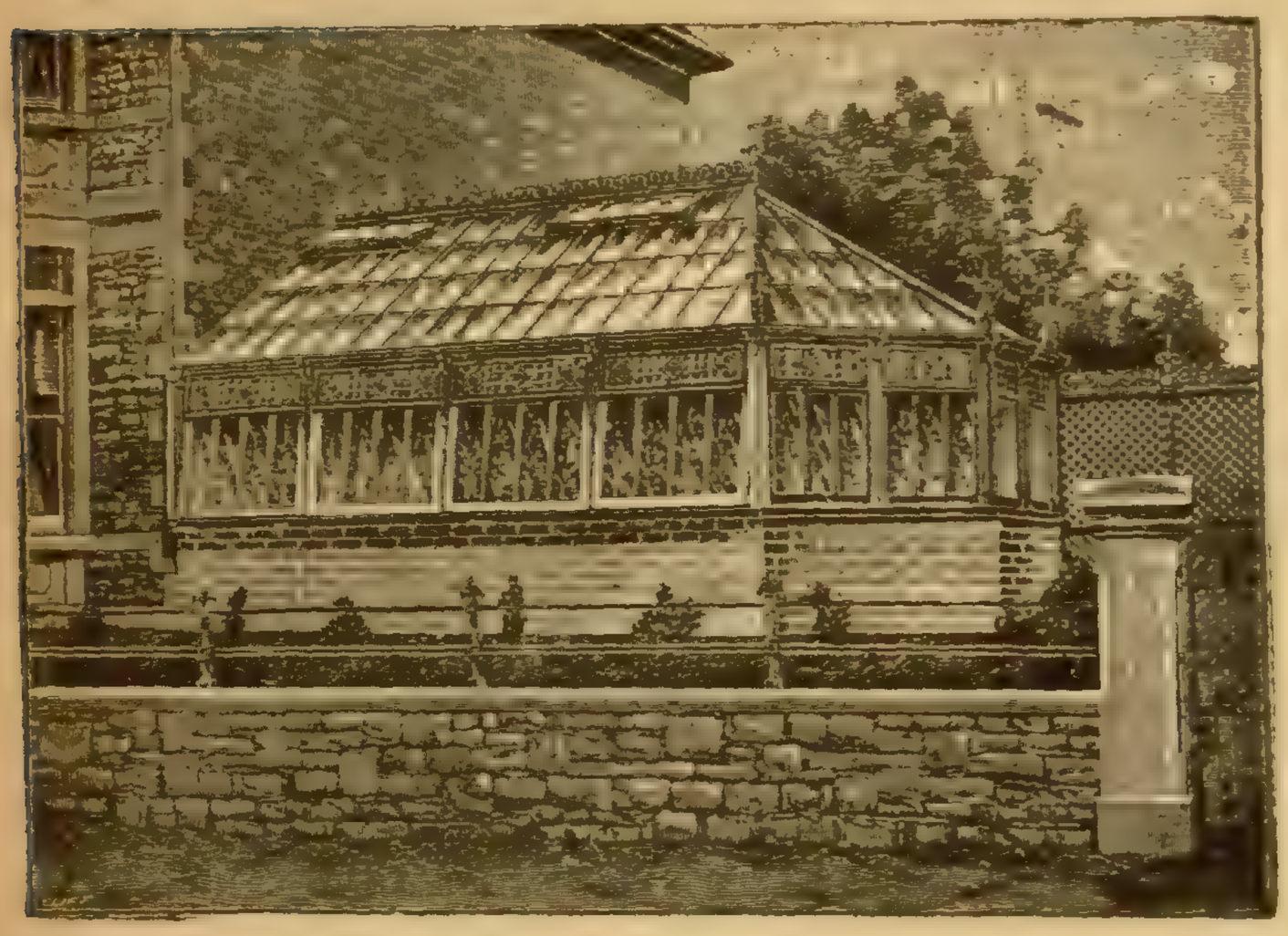

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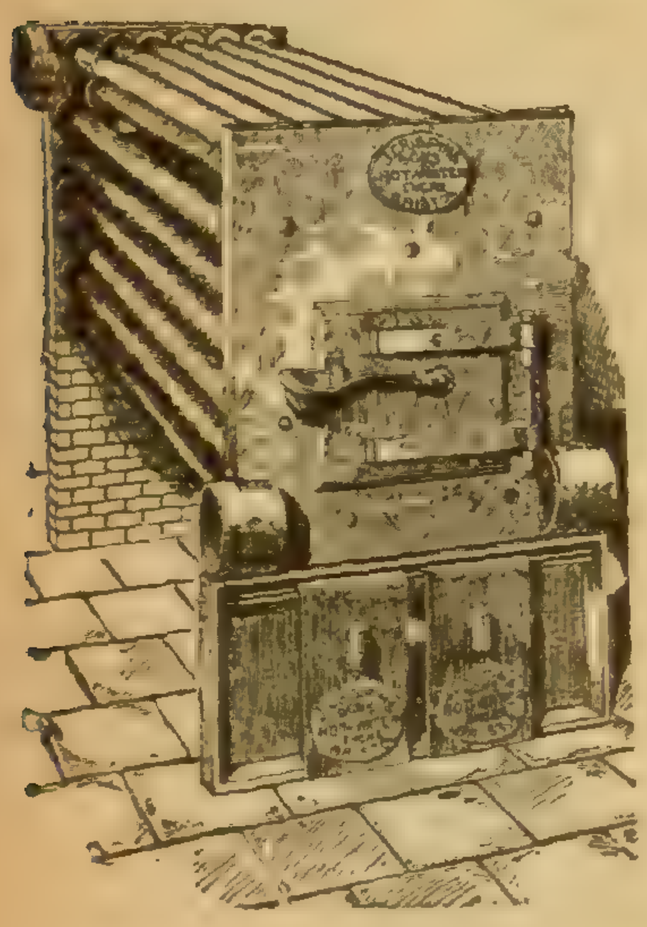

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THE

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DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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DIES ORCHIDIANÆ.

My remarks on seedling Odontoglossums at page 259 might have been prophetic, for we have now a record of young seedlings between O. crispum and madrense (p. 276), and at the Royal Horticultural Society's meeting on September 11th Mr. Crawshay submitted two of his seedlings which have reached the flowering stage. To be able to exhibit two such plants from different crosses at the same time is of itself an achievement, but one of them was interesting on another account, being none other than the remarkable Odontoglossum Wattianum, whose origin has been the subject of a good deal of discussion. Some time ago I heard that a collector was on its track, and an importation of it was expected, though I believe it never turned up, and the reason is now pretty clear. Mr. Crawshay raised it by intercrossing O. Lindleyanum and O. Harryanum, and now that the secret has been discovered we must look to our hybridists to increase the stock. The other seedling alluded to was from a cross between [illegible]Hallii and O. crispum lilacinum, of which two examples have previously flowered, so that there can be no doubt of the progress which is being made in raising Odontoglossums by hand. The Committee made no award in either case.

The last meetings of the Royal Horticultural Society and the Manchester and North of England Orchid Society afford some interesting matter for reflection. At the meeting of the former society no award was made to any individual plant, but at the latter no fewer than eighteen exhibits were considered worthy of such distinction, the awards consisting of four First-class Certificates, twelve Awards of Merit, and two Cultural Commendations. It cannot be affirmed that there was the amount of difference between the plants presented at the two meetings which the

awards would indicate, and therefore the difference must arise from the different standard of merit adopted by the two societies—or, perhaps it would be better to say the different inducement offered to exhibitors to bring their plants. Some time ago it was proposed to establish a sort of "Hall Mark" of Merit for Orchids, and it would be interesting to know which Society is doing the most to further this end.

In commenting on the awards at the Hybridisation Conference held last year, I alluded to the presence of meritorious exhibits which were not adjudicated upon by the Orchid Committee, apparently owing to some informality in the matter of a special entry. I then suggested that the necesity of a special entry might very well be abolished, and that an exhibit which had gone through any formalities necessary to allow it to appear at the meeting should then be entitled to the consideration of the Committee, if of sufficient merit. Those who care to refer back to page 260 of our last volume will see that there were good grounds for the remarks, and something very similar has since occurred. The Floral Committee, however, which formerly looked after the interests of the Orchids, seems to be troubled in another way, judging by the remarks of one of its members.

"WANTED—A CENSOR.—Such a person seems to be becoming increasingly necessary in relation to the meetings of the Floral Committee, someone who shall have the power to reject as unworthy of notice subjects which only waste the time of the Committee when brought on to the table, as they are frequently of an inferior character and unworthy of consideration. The tendency to submit inferior subjects is on the increase, and needs to be checked in some manner. A Member."—*Gard. Chron.*, Aug. 25, p. 154.

Another member (Sept. 1, p. 174) thinks "that the remark is so much to the point that it ought to bear some practical fruit," and that the time of the Committee "is largely wasted by exhibits of quite obvious worthlessness." The remedy proposed is that when exhibits of "no obvious merit" are presented the Chairman shall direct that they be set aside *pro tem.*, and that the Committee should go and have a look at them at the close of the sitting "to determine whether there is anything of merit among them or not."

If the remarks had concerned the Orchid Committee, I should have suggested that if the members were to walk round the tables perhaps they might be able to find out the objects of merit for themselves.

The note about Orchid fibre at page 276 is curious, but it strikes me as one which I have met with before in another form. The late Major-General Berkeley published a note in these pages respecting the use by the Andaman islanders of a fibre made from the stems of Dendrobium secundum for the string, or "connector," with which the head is fastened to the shaft of the arrows which they use for shooting fish (vol. i., p. 82). But it afterwards appeared that it was the yellow bark of the plant that was used, the fibre coming from a totally different source, and that Orchid bark was used for ornamenting various articles, both by the Andamanese and by a native tribe in Torres Straits who greatly resemble them in their habits (vol. vii., p. 266). The latest version seems to be that a very delicate fibre is prepared by the natives, which they use in the preparation of the many ornaments those races prepare for trade with the paler races of man.

I have culled the following from the issue of *American Gardening* for September 8th :—

"LOOKS LIKE AN EQUATION IN ALGEBRA.—Epidendrum Umlauftii, Zahlbr., Wien Ill. Gart. Zeit., 1893, p. 1, t. 1. = E. costaricense, Reich., Bot. Zeit., x., p. 937.—R. A. Rolfe."

I should think it looks rather more like a joke, for wondering what could be the point of it I suddenly remembered a note which recently appeared in the *Review* (p. 238), signed by "R. A. R.," giving the history of Epidendrum costaricense, and on looking it up I find that the author gave two references to the sources of information, and these have been taken from their context and now appear in the above garbled fashion. If the information had originally appeared in *American Gardening* the equation would perhaps have read somewhat differently. For example, on the previous page to the above perpetration I find an interesting article on the Cattleya Fly, in which several such useful references appear, also a figure, and if any reader would like to see it I refer them to *Amer. Gard.*, xxi., p. 600, fig. 128. I fail, however, to see the point of the joke.

Here is another interesting little excerpt from another source:—"A Sussex Naturalist" is "greatly astounded at the ignorance which still prevails among us in the matter of field botany," and among other examples cited of this ignorance we read:—

"I visit the gardens of a neighbouring squire, and chat with the intelligent young man who shows me round. . . . When we go to the Orchid House, he tells me that these rare and costly flowers come from abroad, and looks at me with incredulity when I tell him I could show him where Orchids grow near his own door whose flowers assume the shapes of bee and fly, spider and butterfly, and that there are nearly fifty species

of Orchis (*sic*) in the British flora."—*Card. Chron.*, 1900, xxviii., p. 217.

Has it really become quite as bad as this?

ARGUS.

MYCORHIZAS OF ORCHIDS.

UNDER this title appears a very interesting article, by Dr. T. M. MacDougal, in the *Journal of the New York Botanical Garden* (vol. i., p. 7), which we venture to repeat. A very important question to cultivators of Orchids is involved. It would be interesting to know *exactly* why it is that certain Orchids refuse to grow in our collections—whether it is that the higher plant does not receive the proper treatment, or that its "unseen associate" is labouring under difficulties and gives up the unequal struggle—and we hope that Dr. MacDougal will turn his attention to this point.—[ED.]

"The roots and underground organs of more than 700 species of Orchids have been examined, and all of this number are found to have formed unions with fungi in such a manner as to form mycorhizas. A mycorhiza consists of the structure resulting from the attachment of the fungus to the roots or absorbing organs in such manner that the association results in benefit to both. The tube-like threads of the fungus generally gain entrance to the roots while they are young, and grow forward, as the root extends in length in the tissues just underneath the epidermis. Branches of the tubes or hyphæ are sent out through the root-hairs into the soil, and the two plants work in partnership to accomplish nutrition. The fungus takes up the products of decaying leaves and organic matter in the soil, and carries them into the root, yielding the greater portion to the higher plant, which may actually get all of its food from its minute associate. Some of this food, however, is built up into starch and sugar, which is given back to the fungus. The higher plant thus takes the crude material given it by the fungus, and makes it into substances which the fungus is unable to construct, but which form a very valuable food for it. In addition to this advantage to the fungus, the root offers it a habitat in which it is free from many dangers it would encounter in the soil.

"The nicety of attention necessary to the successful culture of most Orchids is doubtless due to the fact that, not only must the proper conditions of water and temperature be offered the higher plant, but its unseen associate must be provided with exactly the proper soil and food.

"The fungi which inhabit the hanging roots of the epiphytic Orchids bear the same relation to them, though many inexperienced writers have described them as parasites.

"By the co-operation of the fungus the Orchid is relieved from the fierce struggle to win its food necessary to unaided species, and the great

variations and marked characteristics of the leaves and flowers of this group may be due in part to its method of nutrition. Although not generally known, the variations of the underground organs are almost as great as those of the aërial parts. Thus the Coral-roots (Corallorhizas) have lost their roots entirely, and the underground coralloid formations which give them their name are really short branches serving the purpose of roots, and are inhabited by a fungus. Some of the near relatives of the Coral-roots show a tendency to construct underground branches, especially Aplectrum and Calypso.

"If one digs up a specimen of Aplectrum he will find an old corm of last year's growth connected by an offset an inch long with a young corm which sends up a leaf in the autumn. The fungus which lives in the root of the old corm travels through this offset and down into the new roots formed at its tip when it begins to enlarge to make the young corm. Now, if the growth of the offset should be disturbed, or if it should not be properly nourished from the old corm, it develops all of the latent buds along its sides into coralloid branches, with hairs through which the fungus sends tubes out into the soil and brings in a supply of material.

"The leaves which spring from offsets developed in this manner are much narrower than the ordinary forms. The clumps of Aplectrum which grow alongside a decaying log, or which have found a footing in the remains of one, are very apt to make these coralloid formations, or they may be produced at the will of the experimenter, if old corms are separated from the plant and made to germinate the latent buds."

"About two hundred specimens of this plant are now growing in a single plantation in the New York Botanical Gardens, and a number have the narrow leaves indicative of the curious underground stem or branches of the offsets."

MEGACLINIUM BUFO.

Let the reader imagine a green snake to be pressed flat like a dried flower, and then to have a row of toads, or some such speckled reptiles, drawn up along the middle in single file, their backs set up, their fore legs sprawling right and left, and their mouths wide open, with a large purple tongue wagging about convulsively, and a pretty considerable approach will be gained to an idea of this strange plant, which, if Pythagoras had but known of it, would have rendered all arguments about the transmigration of souls superfluous.—*Lindl. Bot. Reg.*, 1841, Misc., p. 42.

It is very curious that nothing further should be known of this remarkable Sierra Leone species since it flowered with Messrs. Loddiges at this period.

ORCHID GROWING AS A HOBBY.

(*Continued from page* 268).

WHEN the houses were completed and in working order the plants were removed into their new quarters, but there still remained much vacant space, to fill which the owner, whom we will call Dr. C., soon set about to reduce. A visit to the Sale Rooms and the expenditure of a moderate amount of cash yielded a nice little batch of Odontoglossum crispum and some imported Cattleyas and Dendrobiums, while a number of miscellaneous things were acquired at one of the nurseries. Some of the imported things were at once potted up, and others were hung up or laid out on the stages, on a layer of sphagnum moss, until the roots began to push, when these also were potted or basketed as the case might be. These operations naturally took up some little time before all were completed, and when I looked in one morning shortly afterwards I found the Doctor surveying the result with a considerable amount of satisfaction. Innumerable young roots were pushing out into the new compost, new growths were starting, and the plants generally were taking to their quarters in a way that promised well for the future. In the established part of the collection various spikes were pushing up, and there was a fair sprinkling of others in flower. What they were I hardly remember at this distance of time—for this was in the early days of the collection—but probably such as are found in many other similar collections in the early summer.

Of course we made a tour of inspection through each department, and the Doctor was very enthusiastic over the promising outlook, pointing out various features which would have escaped my notice. He seemed to have discovered every flower spike that was pushing up, and how they were to be distinguished from young growths. In the case of the Cypripediums, some spikes were pointed out in the centre of the growths which looked like a new leaf just beginning to push, though I afterwards found that the opinion was correct. It is remarkable how quick one becomes in detecting such features when constantly among the plants. In a batch of imported plants one naturally watches very carefully for any sign of returning vitality, and from the appearance of the young roots and growths it is generally possible to tell what the progress will be by the end of the season. Many of these were examined, in some cases when only visible after pulling the moss on one side, and every grower will realize how the progress of such growths is watched almost day by day, particularly when the young flower spikes are beginning to push.

One rather amusing circumstance may be related here. It is well known that many plants are purchased in the sale rooms in the hope of obtaining unexpected novelties in the way of natural hybrids or fine varieties, and

plants are often selected at the sale rooms on account of little peculiarities about the pseudobulbs or leaves which would otherwise be overlooked. Dark markings on the bulbs are often associated with the idea of rich spotting in the flowers or the absence of markings from the underside of the leaves with albinism, and some of these peculiarities have a solid foundation in fact. The Doctor had picked out of some Odontoglossums a rather distinct-looking bulb which had some blackish, nearly transverse, bars near the apex, and this plant was being watched with an unusual amount of interest. Later on, when it seemed to hang fire in the matter of flowering, rosy anticipations were in no way diminished, especially as the plant grew well, and promised to make a fine bulb. Hybrids were often very vigorous growers. At last the spikes appeared, and here again there was something peculiar, and at length it became apparent that the plant was some "wretched Oncidium." The phrase, I suppose, was comparative, and not altogether unnatural under the circumstances, but the flowers in the end proved to be rather attractive and were duly appreciated.

This is rather a digression, and I fear that my notes may become rather discursive at times, though I hope they will not be the less acceptable on that account. Perhaps some of my readers may have had similar experiences of their own, and can fill in the missing details for themselves. I need not dwell longer on this particular visit, because some of the details will come in later on, but I found out that the Doctor intended, among other things, to go in for a little hybridising, and had been initiated into some of the mysteries by a brother amateur of whom I had already heard.

Later on in the autumn I looked in again, and found that things had made considerable progress. Some of the imported plants were maturing good growths and bulbs; others were woefully dwarfed as compared with those on the imported plants, which told of the severity of the struggle that they had gone through since they were ruthlessly torn from their natural surroundings, though in all probability they would greatly improve next year; a few, alas! had died—a circumstance probably inevitable in the case of imported plants. A few had attempted to flower, but were wisely checked, or only one or two flowers allowed to develop just to show what they were like. Altogether the results so far were highly satisfactory.

A few other plants had accumulated from various sources, by purchase or exchange, including a mixed lot whose origin was a matter of some uncertainty, but which from internal evidence seemed to be candidates for the warm house, where they had been placed by way of experiment. A good many plants, I fancy, have to be treated on such principles.

Several of the established plants were in bloom, and one, I remember, was Vanda cœrulea, which bore a good spike of its beautiful lilac-blue flowers, and excited much admiration. There were several flowers and buds

of the old Cypripedium insigne, which is, I think, the most easily grown of all Orchids, and emphatically a plant for a beginner, as with ordinary care it is scarcely possible to go wrong with it. I also remember Cattleya Forbesii and a good C. Loddigesii, together with Miltonia Clowesii and candida, with a couple of nice examples of Lælia pumila. I think there were also Oncidium Forbesii and O. varicosum, certainly O. sphacelatum, and there were a few others whose names I have now forgotten. Not a large lot, perhaps, as things go to-day, but not less highly prized. At all events, we spent some time in admiring them, and in looking through the collection and noting those which promised to bloom in the near future.

A. O.

(To be continued.)

CATTLEYA × RESPLENDENS.

TAKE a Cattleya granulosa and give it flowers of Cattleya Schilleriana, the long sepals being placed as in the first, and the very narrow long petals much undulated, then you have this plant. The dull olive-brown sepals and petals have thinly-scattered purple spots, and remind one of Cattleya guttata Leopoldi. The lip is fine white, with warm amethyst keels and small warts of the same colour. The cuneate bilobed stalked mid-lacinia has numerous rough warts in the middle and many keels on the lateral parts, which, of course, are externally toothletted. The side laciniæ are much developed and very acuminate.

There is scarcely a year in which Mr. Stuart Low has not puzzled us with the Cattleya intricata, and now comes again such an individual which, finding no place anywhere under the known species, must get a proper name. Mr. S. Low and his staff think it a mule between Cattleya granulosa and Cattleya Schilleriana, and they may most probably be right.—Rchb. f. in *Gard. Chron.*, 1885, xxiii., p. 692.

Does anyone know what this plant is, or what has become of it?

ODONTOGLOSSUM TRIUMPHANS.—In connection with the question discussed more than once in these columns whether Odontoglossum triumphans and O. crispum ever grow together, it is interesting to note a remark made by Messrs. Veitch:—"Kalbreyer also informs us that an Odontoglossum very much like O. triumphans, if not the same, is occasionally found with O. crispum on the Cordillera east of Bogota."—*Man. Orch.*, i., p. 69.

VANDA TERES.

THE annexed figure represents the beautiful specimen of Vanda teres which formed such a prominent feature in the group of six specimen Orchids exhibited by H. Little, Esq., of Twickenham, at the last Richmond Show, to which the First Prize was awarded. It is reproduced from a photograph taken by Mr. Howard, Mr. Little's able gardener, who has been very successful with the collection of Orchids under his charge. The present example speaks for itself, as the species is not one of the easiest to flower, except under very favourable circumstances. Here, however, it generally

FIG. 42. VANDA TERES (SPECIMEN PLANT).

does well, the plants being placed at one end of a Warm house, where they get plenty of direct sunlight, without any attempt at shading. It is one of the few Orchids which seem able to stand the brightest sunlight without injury; indeed it benefits rather than not by the treatment, as may be seen by a note at page 234, when the beautiful variety candida was figured. In other respects, the treatment given is much the same as that described at page 223. When thus grown it is certainly a charming thing.

RAISING ORCHIDS FROM SEED.

ANYTHING about the raising of Orchids from seed has a value, but there is one very important matter that might have a little more attention paid to it, and that is the condition and strength of the seed-bearing parent. To make a weakly plant carry a seed-pod often ends in great disappointment, the plant being shaken beyond recovery, and, besides, the seed may be immature or of poor germinating power. As the best varieties are usually chosen for hybridising, their loss is a consideration, but the struggle with bad seed generally leads to more discontent. Raisers of plants, in general, from seed unhesitatingly assert that the strength of the plant begins in the seed—strong seed gives, with just treatment, strong plants, and poor seed, weaklings. And so it is with Orchids. There is, as a rule, a fair amount of difficulty experienced in getting good seed up, and it would take not a little courage to guarantee the raising of any cross not previously tried, and, indeed, even then. But with strong, well-rooted, clean, and healthy parents the chances are in favour of success, and the hybridiser is at least on one point on an equal footing with nature. Seeds from a half-starved plant will, when exposed to heat and moisture, swell a little and become green, but the essential something is wanting to carry them through as far as to form the growing crown, at which stage they can be safely pricked off. I know that good seed has a disagreeable readiness to tarry in these stages of promise as well.

Would it not be safe to assume that the right time to increase the fertility of Orchid seed is before the seed is ripe, and not after? Are all the constituents required by the ripening seed abundantly present in peat and moss—and in soluble compounds? The strain which the strongest plants suffer when bearing seed with us is not evident in imported plants.

With most species, the best plants to hybridise are strong, imported pieces flowering for the first or second time, and which still retain something of their natural vigour, and the worst are those which have been hackneyed from collection to collection *via* the sale-rooms.

Streatham. J. M. BLACK.

SEEDLING ODONTOGLOSSUMS.

I THINK that if every one of us who are interested in Odontoglossum crispum all gave their experience of seed-raising among them it would be a great mutual help. I am hybridising a great many, and hope for good results. There are seedlings in several collections, a few of them almost at the flowering stage.

R. BROOMAN WHITE.

HYBRID ODONTOGLOSSUMS.

(*Continued from vol. vii., p.* 169.)

THERE are two or three other doubtful Odontoglossums from the Andes whose origin has never been satisfactorily cleared up, though a very interesting circumstance now removes one of them permanently from the list, namely :—

ODONTOGLOSSUM × WATTIANUM.—This very beautiful plant flowered in the establishment of Messrs. F. Sander & Co., St. Albans, in 1899, and was described by me, being dedicated to the late T. R. Watt, Esq., of Chislehurst. Its origin was a matter of uncertainty, as will be seen from the original account :—

"This is a very handsome Odontoglossum, though whether a natural hybrid or a distinct species would perhaps be difficult to decide at present. On the whole, however, I incline to the former view. It bears so strong a resemblance to one or two natural hybrids, which undoubtedly have O. luteopurpureum, Lindl., for one parent, that I cannot help thinking it comes from the same species. The other parent is not so obvious, but, from a variety of considerations, I think it may have been O. Lindleyanum, Rchb. f. The lip is stalked, the apex acuminate, and the column rather long, all of which characters would be expected to occur in such a hybrid, and as the two species grow together, such a one was likely to appear sooner or later. On the other hand, there are four or five plants which are said to have the same character, but these may be subdivisions of one original plant, or seedlings from the same seed pod; otherwise, the fact might be cited as one that told against its hybrid origin. . . . The materials to hand consist of two pseudobulbs, a leaf, a single flower (care-fully dried), and an excellent sketch, with analytical details. I should not like to say that it may not prove a distinct species, as has been supposed, though at present the chances seem against it."

Subsequently it was figured in *Reichenbachia*, when Messrs. Sander wrote :—"A very great surprise awaited us when we flowered this handsome species in the spring of 1889 in our establishment. A few plants had been sent home to us in 1888, by one of our collectors, as Odontoglossum species from the United States of Columbia. . . . There is a great doubt in our minds whether this Odontoglossum is a natural hybrid or a true species, but we are inclined to lean towards the latter theory. . . . It is very rare in its native habitat, and a few plants only came home, but these were found at long distances apart, growing in the forks of small oak trees, at a lower elevation than Odontoglossum crispum. . . . Since flowering our plants we have in vain tried to get a further supply."

I then described it as intermediate in habit between O. Lindleyanum

and Harryanum, adding: "This handsome Odontoglossum was described by me some few months ago as a doubtful hybrid between O. Lindleyanum and O. luteo-purpureum. At that time I had only a single dried flower, a pen and ink sketch, a couple of old pseudobulbs, and a few notes, to guide me, but on seeing Mr. Moon's beautiful painting, here reproduced, I felt obliged to give up the idea of its hybrid origin and to consider it a new and distinct species. Its real affinity still seems rather doubtful. If one looks at the elongate column, the stalk, and crest of the lip, and the shape of the sepals and petals, it appears to be an ally of O. Lindleyanum, but on turning to the shape of the lip, and, to some extent, the colour, one sees a certain resemblance to another Odontoglossum. Perhaps in the future we may find out more about it."

All these elements of uncertainty are now removed, for on September 11th a plant was exhibited by De Barri Crawshay, Esq., at the Royal Horticultural Society's meeting at the Drill Hall, which had been raised artificially by crossing O. Lindleyanum with the pollen of O. Harryanum. Mr. Crawshay writes that he made the cross on September 12th, 1894, the seed was sown on August 1st of the following year, and now the plant has produced a spike of eight flowers, of which the first three blooms opened on August 24th. The plant has three bulbs and is growing strongly. The flower sent has all the essential characters of the wild plant, but the limb of the lip is broader and nearly truncate, measuring 16 lines long by over 11 lines broad at the base and 8 lines near the apex; the ground colour is also wholly yellow, with no trace of white, the broad blotch is close up to the crest, without a yellow interval, and there are many small spots at the sides on the basal half. The sepals and petals are also proportionately broader and less acuminate. Owing to these marked differences the plant was exhibited under the name of O. × Wattianum Crawshayanum.

Mr. Crawshay must be congratulated on having solved a very interesting scientific problem, as well as of raising a very handsome garden plant, and I hope that he will attempt to demonstrate the origin of other natural hybrid Odontoglossums.

I may add that I have known of the existence of this seedling for a considerable time, and it has been generally agreed that when it flowered it would prove to be the mysterious O. × Wattianum. Had it been known from the outset that O. × Wattianum came from the unknown district of O. Harryanum, of which an importation was received at about the same time, there can be little doubt that its origin would have been guessed from the first. Soon after the *Reichenbachia* figure appeared, I was told in confidence by another collector that O. Harryanum and O. sceptrum grew together in the Antioquia district, and that O. × Wattianum came home with them, and, he had no doubt, was a natural hybrid between

them. To which I replied, O. Lindleyanum grows there, too, and it must be this, not O. sceptrum, which is the second parent. M. Fl. Claes, also, has since told me that all three of these plants grow in the vicinity of Yarumal, in the Antioquia district, and there is no longer any reason for keeping the locality secret. O. Lindleyanum is well known to be a very widely diffused species.

The following are the references to the literature of the subject:—

O. × WATTIANUM, Rolfe in *Gard. Chron.*, 1890, vii., p. 354; *Garden*, 1890, xxxvii., p. 416, t. 751; *Reichenbachia*, ser. 2, 1, p. 19, t. 9; *Journ. of Hort.*, 1895, xxxi., pp. 149, 159, fig. 22.

R. A. ROLFE.

(To be continued.)

SOBRALIA CATTLEYA.

"HERE also is a large specimen of Sobralia Cattleya, whose long stems go on and on but never flower." The note appears in a recent account of the Right Hon. J. Chamberlain's estate at Highbury (*Gard. Chron.*, 1900, xxviii., p. 194), and drew a very interesting note from Mr. C. Woolford, The Priory, Isle of Wight, in a later issue (p. 231), which we may repeat here:—

"SOBRALIA CATTLEYA.—In your article on Highbury I was specially interested in the remarks on Sobralia Cattleya, as it is probably the same plant which I tried to flower, but without result. When I came to this place I found here a strong specimen of this species, and having the advantage of a warmer climate than that of Birmingham, I resolved to try out-door treatment during the summer for this plant. It was placed outside against a wall for three months, and from the middle of June it was slightly shaded from the sun during the warmest part of the day until the foliage became hardened. The treatment seemed to suit the plant, which has been proved by its starting vigorously from the base; and these growths differed in some respects from those which grew under glass, as they formed at the base a bulb similar to what occurs in Cattleya Bowringiana, and this formation caused me to have great hopes of ultimate success. In the month of September the plant was put back into a house where Dendrobiums were resting, and kept for nearly six months without any water being afforded it, but no flowers came. I tried the same kind of treatment for three years, except that Veitch's horticultural manure was applied during the summer, and the plant was not kept so dry during the winter, but I had no success. It would be interesting to know if any of your correspondents have tried out-door treatment for this kind of Sobralia."

Curiously enough, in 1893, Mr. White related a somewhat similar

experience with the Burford plant, but equally without result (*O. R.* i., p. 18), and in 1898, after renewed failures, he proposed to submit it to still more radical treatment (*O.R.* vi., p. 47), which seems to have been so far successful that a bud was produced on a small side shoot near the top of one of the tallest growths (*l.c.*, p. 260.). We afterwards learnt that the single flower was not a fully-developed one, but we hope that it gives promise of success in the future.

THE GENUS HUNTLEYA.

(Concluded from page 272.)

HUNTLEYA GUSTAVI (Batemannia Gustavi, Rchb. f. in *Linnæa*, xli. p. 108; *Xen. Orch.* iii., p. 39, t. 216, fig. 3, 4).—This species is a native of New Grenada, where it was collected by Gustav Wallis at 5,000 to 6,000 feet altitude, and was described by Reichenbach in 1877. It is allied to H. meleagris, Lindl., and has yellow flowers with two transverse red blotches on the petals, the sepals largely suffused with the latter colour, except near the base, and the front lobe of the lip minutely spotted all over. I have not seen specimens of it.

HUNTLEYA APICULATA (Batemannia apiculata, Rchb. f. in *Linnæa*, xli, p. 109; *Xen. Orch.* iii., p. 38, t. 216, fig. 1, 2).—This is another of Gustav Wallis' New Grenadan discoveries, and was described at the same time as the preceding. Its altitude is given as 1,000 feet, and only two specimens are said to have been found. It is a small species, with flowers about half as large as the preceding, and white in colour, and it is said that the two flowers in Reichenbach's Herbarium are all that came to Europe; in fact, they were brought to Wallis when lying sick at the Hospital at Cuenca, and no one seems to have discovered the species since.

Two or three other species were referred to Batemannia by Reichenbach, but so far as I can find they either belong there or to the allied genus Galeottia, and it is rather difficult to see why Huntleya should have been associated with them. It would be very interesting to see the other species in cultivation, and sooner or later some of our collectors ought to meet with them, in which case I hope that they will secure specimens for drying as well as living plants. It frequently happens that species difficult to import never reach home alive, but if dried specimens were also secured it would at all events make us acquainted with their characters.

Since the above was written I have dropped across an interesting note by Roezl, which it may be interesting to repeat in this connection:—

"BATEMANNIA WALLISII MAJOR (Rchb. fils.).—What a fine flower for an Orchid! Such was my first impression when I discovered this species. The flower reaches 15 centimetres (six inches) in diameter. Its colour is

brick-red, with blotches like little drops of water on the petals and sepals, which have at their base a large dark blotch. The lip is very acuminate, 7 centimetres long, in colour darker than the sepals. Although at first sight the plant resembles a Pescatorea, it differs in its leaves, which are distichous. Between each leaf grows out a large and peculiar flower. It does not form tufts like the Pescatoreas, but it climbs the trunks of trees and often envelops completely the trunk of a palm. Pescatoreas, on the contrary, form large tufts.

"To my knowledge, there are only four kinds of Batemannia known: Batemannia Burtii, from Costa Rica; Batemannia Burtii Wallisii, from Ecuador; Batemannia Burtii Wallisii major, from Colombia. . . . Lastly, Batemannia meleagris from South Brazil. A great many examples of this beautiful species have been introduced, and it is really regrettable that this plant has not yet flowered in Europe, and that there should be so few living examples of it. It is a great pity that it remains unknown to amateurs of this beautiful family. I may again mention the conditions under which the plant grows. The temperature is the same throughout the year—from 25 to 30 degrees C. (77-86 deg. Fahr.), and even more; very little sun, mostly in the shade, always much humidity, and the rain is every day very heavy, so that the plant is almost constantly wet."—Roezl in *Orchidophile*, i., p. 446.

R. A. R.

SOBRALIA CROSSED WITH CATTLEYA.

In an account of the collection at Highbury, Birmingham, the seat of the Right Hon. J. Chamberlain, M.P. (*Gard. Chron.*, 1900, xxviii., p. 194) occurs an interesting note respecting "plants of what should be a hybrid between Sobralia macrantha and Cattleya Warscewiczii, the seedlings being raised from seeds so recorded. The flowers and growth can only be those of S. macrantha, though there is a peculiar elongation of the lip and other strange features about it."

These plants, we believe, were first mentioned at page 366 of our first volume, when Mr. Burberry wrote:—"It may interest your readers to know that we have a healthy batch of about a dozen plants obtained by crossing Sobralia macrantha with the pollen of Cattleya gigas." At page 331 of our sixth volume we also read:—"The seedlings of Sobralia macrantha reported as crossed with the pollen of Cattleya gigas are rapidly approaching the flowering stage, but we fail to see any trace of the Cattleya parentage in them."

They have now flowered, and it would appear that they afford a parallel to the now familiar case of *Zygopetalum* crossed with Odontoglossum. In each case we should like to see reverse cross attempted.

DISEASES OF ORCHIDS.

THE subject of Orchid diseases, their prevention and cure, is of great importance to Orchidists generally, and we have great pleasure in inserting the following communications which have reached us in response to communications in our last two numbers. The first relates to the "Cattleya disease," and the second to a disease of Dendrobiums, but whether both are due to the same cause or not is one of those questions which we hope to see cleared up by the investigations which Dr. Burtt, acting for Messrs. James Backhouse and Son, proposes to make, and the results of which we hope to be able to report to our readers in due time. When we know the nature of the disease it will be more easy to suggest a remedy.—[ED.]

"I should be glad if, in your next number, you would ask those of your readers who have specimens of the 'aurea' section of Cattleyas, which are infected with the Cattleya disease—as, for instance, your correspondent at p. 240 of the August number—to be kind enough to send us portions of the infected plant or plants for the investigation of the disease in our research laboratory. The specimens should be packed so as to prevent damage and loss of water in transit, clean, soft paper being used as packing material, and they should be accompanied by as much information as possible respecting conditions of growth, &c., to assist in a correct diagnosis of the disease.

"DR. ARTHUR H. BURTT,
"Director, Scientific Department.

"The Nurseries,
"York."

Referring to the subject so usefully brought up by ARGUS on page 258 of your last issue, I send herewith a new pseudobulb of Dendrobium ochreatum which has "damped off" at the base. I have lost many Dendrobe bulbs by this disease, which I associate with a green fungus or slime which seems to spread over the potting material from the pot or basket, and it is common to both moss and peat. The disease by no means confines its attacks to those subjects which are in a saturated condition, for it not infrequently manifests itself during the "resting" period, although it is probable that the material may at one time have been damp. I hope other readers who have had similar trouble will give us the benefit of their experience in your columns, that in the accumulation of evidence it may be possible to arrive at the true causes and a remedy.

F. H. MOORE.

Liverpool.

VANDA CŒRULEA.

VANDA CŒRULEA, when seen at its best, is one of the most distinct and beautiful autumn-flowering Orchids in existence, as would be admitted by all who saw the fine example exhibited by A. Hay, Esq., at the R.H.S. meeting on September 11th last, to which a Cultural Commendation was

FIG. 43. VANDA CŒRULEA.

given. It bore a noble spike of seventeen expanded flowers. The present figure represents another very distinguished example, being the one to which a First-class Certificate was given by the R.H.S. in August, 1895, when exhibited by E. H. Woodall, Esq., of Scarborough. It may be

interesting to repeat the substance of Mr. Woodall's note :—" The plant of Vanda cœrulea shown is interesting as well as beautiful, because it endured for nearly three years the most varying treatment while trying to find out what suited it best. It speaks volumes for the hardiness and vigour of this species to be able to say that after enduring the heat and moisture of a warm stove for a year and a half it has now recovered so thoroughly as to be able to produce a spike of bloom to which a First-class Certificate was awarded. The secret—if there be one—of success with this lovely flower is air, abundance of it whenever possible, with sufficient moisture in the atmosphere to counteract the excessive drying caused by ventilation. Warm vinery treatment from mid-March to mid-October, a winter near the glass in the Cattleya house, and in the end of January or in early February a dry, cold rest in a house where Primulas and such-like plants are." It would be interesting to know how far Mr. Hay's treatment agrees with the preceding. The species has sometimes the character of being a bad grower, but this, we believe, largely arises from wrong treatment. The importance of a complete cool rest in winter is a point sometimes overlooked, but the conditions under which it grows in a wild state, both in the Khasia Hills and in Upper Burma, justify the method of treatment adopted by Mr. Woodall with such success. Mr. R. Moore reports finding it in the Shan States on trees overhanging a stream at 5,000 feet elevation, but not in deep shade. The temperature here varies from 80 degrees in the summer months to a few degrees below freezing point in the winter, and the rainfall is from 40 to 60 inches per year, distributed principally from May to November, though showers also occur from January to April, and the dews are heavy during the winter months, December especially. These hints should be useful to those who experience a difficulty with it. It is the Burmese form which is here illustrated, and this is well known to be superior to the Khasian type. The latter also grows under very similar conditions, and these were pointed out in detail at page 362 of our second volume.

ORCHID COLLECTING IN NORTH CELEBES.

VERY few Celebes Orchids are in cultivation, though a very graphic account of the difficulties attendant on their collection is given by Mr. Sidney J. Hickson in a work entitled " A Naturalist in North Celebes." He writes (p. 71) :—

"Of the many heart-rending disappointments it was my fate to undergo, I think that my experience as an Orchid collector was the chief. When I first arrived, and was well enough to search for such things, there were few Orchids—in accessible places, at any rate—in flower. The only

one I obtained was a species of Grammatophyllum. I set to work to collect a number of the bulbs to send to England. Now, collecting Orchid bulbs in a region of the swamps may be an entertaining amusement to other people who are looking on, but it is an unpleasant sport for the naturalist; so disagreeable is it, indeed, that Manuel, after one day's experience of it, refused to help me any further. The reason is that, as one pulls away the Orchid from the tree to which it clings, numbers of large red ants, which are always running over them, turn round and fiercely attack the would-be Orchid collector.

"These ants ran up my arms, down my neck, up my trousers, and in a short space of time no part of my body was free from their sharp, painful nips. An hour spent in collecting Orchids in the swamps made me as angry and uncomfortable as two or three hours of ordinary forest work, and the irritating thing about it is that Manuel, who, no wonder, refused to help me at it, would stand aside and grow gradually more cheerful and amused as my pains and aches increased. By the time the rains commenced I had a tolerably large collection of Orchid bulbs to send home, but they were neglected when I fell ill in December, and had finally to be thrown away, as they had become quite useless for transport to Europe."

A Mangrove swamp is not a very pleasant or healthy place, but certain Orchids are not the only things which flourish in such localities.

"Work in the mangrove swamps was always depressing and disgusting. The damp, stifling, stinking atmosphere, the muddy, slippery ground, and the swarms of ants, flies, mosquitoes, and other abominations, made the work tiresome and annoying. The mixture, however, of marine and terrestrial faunas, and the varied conditions of life the swamp affords, make it an important locality for the naturalist."

The locality in question is in the island of Talisse, at the north-west point of Celebes, and the following further details are given:—

"The best swamps on the east coast of Talisse—that is to say, those that were the broadest and most luxuriant—are situated opposite the southern point of Kinabohatan Island, and about half way down the coast between Koa and Tindela Straits. The best place, so far as numbers go, to collect Orchids, is the sandy beach on the shore side of the swamp, where there are usually a number of young or stunted forest trees, bearing many parasitic ferns and Orchids, which are not beyond the reach of a long pole or rake."

It is probable that the Orchids which grow in such localities would require somewhat similar treatment to that given to Dendrobium Phalænopsis and other New Guinea species, which, we believe, grow in stations not very dissimilar.

CYPRIPEDIUM × MAUDIÆ.

We have received from Messrs. Charlesworth & Co., Heaton, Bradford, a flower of a most beautiful hybrid, which received a First-class Certificate from the Manchester Orchid Society on September 27th, under the above name. It was raised by them from C. Lawrenceanum Hyeanum crossed with the pollen of C. callosum Sanderæ, and is about as intermediate between them as could possibly be. It is interesting to note that there is no trace of reversion, the plant being as true an albino as either parent. The dorsal sepal is very broad and rounded; the colour white closely veined with bright green. The petals are somewhat falcate, light green, with darker veins, and a few darker warts on the upper margins; and the lip is light green. The scape is also light green. Messrs. Charlesworth say that it has an exceedingly good constitution, and they must be congratulated on their success in raising it.

CALENDAR OF OPERATIONS FOR OCTOBER.

By H. A. Burberry, Orchid Specialist, King's Heath, Birmingham.

The temperature for the present month should read as follows:—

Cool House.—Day, with sun, 60° to 65°; without sun, 55° to 60°; night and morning, 50° to 55°.

Intermediate House.—Day, with sun, 70° to 75°; without sun, 60° to 65°; night and morning, 55° to 60°.

Warm or East Indian House.—Day, with sun, 75° to 80°; without sun, 70°; night and morning, 60° to 65°.

The weather during September was all that could possibly be desired—in fact, it proved to be the best growing month throughout the summer—and the partly formed growths have gone forward very rapidly, thus counterbalancing the retarding effects of the dull weather experienced earlier in the year.

The present month must see the new growths properly ripened or consolidated, which takes place naturally if less moisture is distributed, and as much air admitted in each department as the condition of the outside weather will allow. The value of air at this season for all species is great. For Cool Orchids one can scarcely have too much, whilst for Warm and Intermediate kinds under rather than over ventilating is to be feared. Of course it is possible to over-do a good thing, but with ordinary care the latter is not likely to occur this month.

In speaking of air and ventilation, I may again point out the great differences between the various structures in which Orchids are grown. Some are lofty, in which the circulation is free and rapid, and generally a

little ventilation goes a long way. Others are low, the circulation being naturally sluggish. Some have air spaces between the laps, whilst some are so well and tightly built so as to entirely exclude all air unless the ventilators are open. For the latter I would strongly advise that the ventilators be always more or less open, even though it may only be a chink both top and bottom.

Not only should the airing be carefully attended to and the atmosphere kept drier generally, but much less water is now required at the roots. Do not, however, let anything remain dry for long periods just at present, or they will be quite unable to plump up and mature. Later on, in mid-winter only, is when water may be withheld for weeks at a stretch. Cool Orchids will still require very little fire heat this month ; a few hours during the nights should they be exceptionally cold is all that is necessary. The Warm and Intermediate kinds will of course require more, but do not maintain it quite continuously just yet if avoidable, for fire heat, it should be borne in mind, is a necessary evil. Never do Orchids do so well as when it can be done without. Many days will doubtless yet occur when the hot water pipes may be cold, but as for the nights, a little warmth more or less is now indispensable.

With the exception of a very few species, the Dendrobiums have now quite completed their new pseudobulbs, and should be given cool, airy quarters, where they can ripen and set their flower buds. The New Guinea kinds, as D. Phalænopsis, D. bigibbum, D. superbiens, D. macrophyllum, D. atroviolaceum, and D. Johnsonæ, together with D. formosum, and a few other similar heat-loving kinds, should never be rested in a temperature lower than the Intermediate house. But for all others a Cool house temperature is the best. Those that will take the greatest amount of cold if dry at the root are the D. thyrsiflorum and densiflorum group, and D. Wardianum. For the latter a very cold winter treatment is essential until February, or they will not be long lived.

Miltonias of the spectabilis group having now passed out of flower should, of course, have but little water applied to their roots, and be allowed to enjoy a good long rest. I find the warmth of the East Indian house to agree with these kinds the best. M. vexillaria and its varieties, together with M. Phalænopsis, are actively growing, and should be in a light, airy position in the Cattleya house, where the roots should be kept moist only, avoiding too much water. Those of the M. Clowesii and candida types are also best accommodated in the Cattleya house, keeping them dry or moist according to their stage of growth. Some are now producing their flower spikes, which of course must not be starved for want of water.

The Mexican Lælias will now be producing their flower spikes freely, and must still be aided well by fairly large supplies of water, indeed, they

must not be allowed to get very dry until after blooming. The beautiful L. majalis must, however, now be well rested in this house, getting it well up to the light. The lovely little Lælias pumila and Dayana will soon be a mass of bloom, and must still be pretty freely watered for some few weeks, until fully recovered from the effects of flowering, when less will suffice. Though growing fairly well in a Cool house, the Intermediate one is really the best place for them. Being such very free bloomers, they are apt to grow weaker as years pass by unless a little care is exercised. They should be grown in pans or baskets suspended, and good peat and sphagnum should be used so that re-basketing is not again necessary for some time, as it checks them considerably. They start growth rather late in the summer, but grow rapidly, and should then be freely watered. The very weakly pseudobulbs must not be allowed to bloom.

Such Orchids as Anguloas, Lycastes, Cœlogynes, and similar kinds which have completed their pseudobulbs, should henceforth have less and less water, thus gradually hardening them off and enabling them to withstand long droughts. The first-named should remain in the coolest house to rest, as also Cœlogyne cristata, which will probably not quite be finished up yet. All others, as also the Lycastes, are better in the long run if rested Intermediate, although one need not hesitate to rest the whole Cool so long as the roots are dry. Any that have still to finish growth should be afforded liberal treatment regarding water.

Pleiones lagenaria, maculata, and Wallichiana are now one mass of bloom, especially the first-named, which for beauty and also for freedom of growth I think takes the premier place. These Orchids should never be rested, as they start to grow immediately after flowering, and therefore should receive all necessary attention regarding re-panning or top-dressing, afterwards keeping them just moist so that they move slowly along suspended near the glass in the Cool house. During summer they delight in a sunny position, but must also have much air and moisture. Grow in fibrous peat mixed with a little good yellow loam and sand. P. humilis is also a cold-growing species, but not yet nearly completed growing, and it does not bloom till a much later date.

Barkerias will also now be in bloom, or nearly so. Some few of the best varieties are worth growing. They can only be grown well when placed on rafts, or in small baskets, and suspended in a fully exposed and airy position, such as near a ventilator in the Mexican house, and deluged with water during the summer, but during winter kept very dry.

The beautiful little Sophronitis grandiflora, now in full growth, must be afforded pleuty of water, and will probably be improved if removed to the Intermediate house, as also would many of the more delicate of the Masdevallias. M. Shuttleworthii, M. Davisii, M. Houtteana, M. Reichen-

bachiana, M. rosea, M. Schlimii, M. tovarensis, and M. Wageneriana, as well as the whole of the M. Chimæra section, may be mentioned as being the better for this removal, as the conditions of the Cool Odontoglossum house are sometimes a little too cold for them in winter, causing spot, or sometimes, worse still, the loss of the foliage. Those remaining, including M. Harryana and Veitchiana, should now henceforth be watered very sparingly, if the disfiguring of the foliage by black spot is to be avoided. Disa grandiflora should be removed from the cold frame to a shelf near the roof of the coolest house, where the air may circulate freely around them, thus preventing damping off. They require but little water during winter, but should not be allowed to get dust dry. Habenarias having now died down, should have a similar shelf, but in the Intermediate house, and must have sufficient water only to keep the tubers from shrivelling, and being quite dormant a very little of course suffices.

Epidendrum vitellinum is one of the most beautiful of species, though it frequently seems anything but robust. It should be grown in the Cool house throughout the year. In summer, when making growth, it should be watered well, but during winter it must be kept dry, and be given a place near the light, or otherwise the leaves are apt to decay at the points. When re-potting them, which should be done in February or immediately after blooming at the end of July, use mostly good fibrous peat, and press it in firmly, surfacing with a thin layer of sphagnum moss.

Such Orchids as Chysis, Catasetums, Coryanthes, and Cycnoches, all most beautiful and interesting when well grown, should have a long, dry winter rest, but in a temperature not lower than Intermediate. The same may be said of Cyrtopodiums and Mormodes. M. luxatum eburneum is a grand Orchid, rivalling the well-known and beautiful Catasetum Bungerothii. A similar course of treatment is necessary for all these, namely, heat and moisture in summer and drought in winter.

Vanda cœrulea is now producing its enormous flower spikes, and must not on any account suffer from the want of moisture amongst its aërial roots. No better house can be found for this species than the ordinary Cattleya house, and the treatment as meted out for Cattleyas is the most satisfactory both whilst growing and resting. A murky, stagnant atmosphere, especially during winter, quickly produces a lively fungus which speedily produces watermarks on the leaves, which afterwards turn black. It is a species that to grow really well is worth a great deal of trouble, therefore, if one position in the structure fails, try another. A house, however, that does Cattleyas well will invariably do Vanda cœrulea. The majority of Vandas also do well in this house, it having been learnt that so much heat as the East Indian house affords is not required, but on the other hand is harmful.

CYCNOCHES PENTADACTYLON.

Cycnoches chlorochilon has recently been flowering very freely in gardens, but the present species, though more rarely met with, is equally remarkable.

Fig. 44. Cycnoches pentadactylon.

The superb specimen here figured was exhibited by W. W. Mann, Esq., of Ravenswood, Bexley (gr. Mr. Simmon), at a meeting of the R.H.S. in

January, 1893, and was awarded a First-class Certificate. The plant bore ten racemes, five of which were on one pseudobulb, and the flowers numbered in the aggregate 247, the best carrying 37. They measure about three inches across, the sepals and petals being light greenish yellow, heavily blotched with deep purple brown, and the erect lip is reduced to two narrow lobes, in allusion to which the name was given. They are, of course, males, the females being considerably larger, and less numerous, also more fleshy, with an ovate, entire lip. In 1889 flowers of both sexes appeared on a plant in the collection of E. Gotto, Esq., of Hampstead.

Remarkable as the specimen figured is, when compared with those usually seen, it does not represent the maximum development of the species, for the late Mr. Edward Rand, of Para, Brazil, states that it is without exception, the giant of the River Purus, and is the most beautiful and fragrant Amazonian Orchid he knows, and that a single flower will fill the air for yards with its delicious, vanilla-like fragrance. He has seen the pseudobulbs three feet long and two inches in diameter, with flowers of both sexes on the same pseudobulb. The males are borne from the top of the pseudobulbs, in drooping racemes over two feet in length, and carrying from fifty to seventy flowers. The female racemes are borne near the base of the pseudobulb, and carried from one to three flowers. What a sensation such an individual would cause if produced in one of our collections at home.

The secret of their successful culture is to give them plenty of heat and liberal supplies of water during their growing season—a light position near the glass in the East Indian house being the most suitable—and afterwards a long rest in a cooler temperature, when very little water should be given, as they are very impatient of moisture at this season. They may be grown in pots or baskets, with a compost of rough fibrous peat and good drainage. They also like plenty of light, and should be placed near the glass.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

A MEETING of the Royal Horticultural Society was held at the Drill Hall, Buckingham Gate, Westminster, on September 11th, when the Orchids exhibited were not very numerous, though they included several specially interesting forms. The Members of the Orchid Committee present were:—H. J. Veitch, Esq., in the Chair, and Messrs. H. J. Chapman, W. Cobb, De B. Crawshay, J. G. Fowler, J. T. Gabriel, A. Hay, F. J. Thorne, H. A. Tracy, W. H. Young, and J. O'Brien (Hon. Sec.).

Arthur Hay, Esq., Oakley Park, Eye, Suffolk (gr. Mr. Pratt), exhibited a splendidly-grown plant of Vanda cœrulea, bearing an inflorescence of seventeen flowers, exceptionally large in size and very richly coloured. It

consisted of a single stem with about two dozen leaves, and deservedly received a Cultural Commendation.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), sent a very interesting specimen of Dendrobium formosum giganteum, with several seedlings round it, one of which was in flower. The original plant was imported in 1897, and some seed which was among the roots germinated, and the seedlings have steadily grown on until reaching the flowing stage—a circumstance which says much for the excellent culture of the plant, and which was recognized by the Award of a Cultural Commendation.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent a finely-grown specimen of Cattleya bicolor called Glebelands variety, bearing eleven fine spikes of flowers, large in size, and having a white margin to the lip. It received an Award of Merit.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent a handsome inflorescence of Cypripedium × Morganiæ Oakwood variety, and one of an unrecorded seedling, possibly descended from C. Boxallii and C. × Leeanum.

De Barri Crawsay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent a specially interesting exhibit, in the shape of two seedling Odontoglossums raised in the collection. O. × Wattianum Crawshayanum was obtained by crossing O. Lindleyanum with the pollen of O. Harryanum, and this clears up the origin of a much-disputed plant. It differs from the wild plant in having relatively shorter and less acuminate segments, and a much broader lip, with the ground colour wholly yellow and the central blotch very large. The other was O. × Cooksoni var. roseum (Hallii ♀ × crispum lilacinum ♂), cream yellow, blotched with dark brown, but differing from the two earlier seedlings of the same batch in having a tinge of rose on the back of the sepals.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent a remarkable spike of Cattleya Dowiana bearing three differently-coloured flowers. One had the lip veined throughout except at the margin, the second had a yellow disc, and the third had a darker middle area which partially obliterated the yellow veining.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), showed a fine plant of Dendrobium taurinum amboinense, bearing three racemes, the flowers being much lighter in colour than those of the typical form. He also sent an inflorescence of the handsome Pescatorea Klabochorum bearing two flowers, a character which we have not previously met with.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent Cypripedium × Unxia (Harrisianum × Lawrebel), a fine hybrid most like the seed parent, with a rich purple tint over most of the flower, and

C. × Mrs. F. L. Ames (tonsum × Fairrieanum), a light yellowish flower, with pale green lines on the dorsal sepal and a flush of rose near the margin, and the petals tinged with rose and spotted with purple.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent a spike of the pretty little Aganisia ionoptera, and the rare Bulbophyllum Reinwardti.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), showed a pretty group of Dendrobium Phalænopsis, comprising about sixty spikes.

Messrs. F. Sander & Co., St. Albans, also staged a nice group of Dendrobium Phalænopsis, a most effective Orchid at this season.

M. Ed. Kromer, Roraima Nursery, Croydon, showed Zygopetalum crinitum.

At the meeting held on September 25th, Orchids were rather more numerous, but the only award made was a Silver Flora Medal to a handsome group exhibited by Messrs. James Veitch & Sons. The Orchid Committee was represented by:—H. J. Veitch, Esq., in the chair, and Messrs. H. Ballantine, T. W. Bond, H. J. Chapman, J. Coleman, De B. Crawshay, J. T. Gabriel, E. Hill, J. Jaques, H. Little, H. M. Pollett, T. Rochford, A. H. Smee, H. A. Tracy, C. Winn, W. H. Young, and J. O'Brien (Hon. Sec.).

Sir Frederick Wigan, Clare Lawn, East Sheen, (gr. Mr. Young), showed the handsome natural hybrid Cattleya × Imperator, Wigan's var., derived from C. granulosa and C. labiata, C. × Greyæ (granulosa Schofieldiana × velutina), with sepals and petals of a peculiar bronzy rose colour, and the lip veined and somewhat approaching C. velutina in character, Lælio-cattleya × bletchleyensis, (tenebrosa × Warscewiczii), a very large form, nearly ten inches across, and rich crimson-purple in colour, and two other handsome hybrids, apparently forms of L.-c. × callistoglossa.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent flowers of the handsome Cattleya × Lord Rothschild (Gaskelliana × Dowiana), and C. × Hardyana, Oakwood var., artificially raised in the collection.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), showed cut spikes of a richly-coloured form of Cattleya × Mantini, C. × Hardyana, Little's var., with richly-coloured lip, and the sepals and petals mottled and veined with white, Lælio-cattleya × velutino-elegans, L.-c. × Sallieri, and a fine form of L.-c. × elegans.

Sir James Miller, Manderston, Duns, N.B. (gr. Mr. Hamilton), sent cut spikes of Cattleya × Bowringiano-velutina, with lilac-purple sepals and petals, but the lip having the characteristic shape of C. velutina.

F. A. Rehder, Esq., The Avenue, Gipsy Hill (gr. Mr. Norris) sent

Cypripedium × Mrs. Rehder (Argus × Rothschildianum). a fine hybrid, with the dorsal sepal ovate, acuminate, and lined with green and purple on a pale ground; the petals tipped with light purple, and heavily blotched with blackish pnrple; and the lip greenish tinged with brown in front.

Col. Shipway, Grove House, Chiswick, showed a nice plant of Vanda Sanderiana bearing two spikes of flowers.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It contained several fine examples of Lœlio-cattleya × callistoglossa and L.-c. × Nysa, L.-c. × Ingrami, L.-c. × Parysatis, L.-c. × Bryan (L. crispa × C. Gaskelliana), L.-c. × Cornelia (L. pumila × C. labiata), L.-c. × Epicasta L.-c. × Isis (L. pumila × C. Mastersoniæ), and L.-c. × Novelty, Lælia × splendens, Cattleya × Chloe (Bowringiana ♀ × bicolor ♂), with rose purple sepals and petals, and a dark purple lip with rather small side lobes and the front lobe somewhat elongated; C. × Mantini, C. × Mrs. J. W. Whiteley (Bowringiana × Hardyana), somewhat resembling a large, rose-coloured form of the preceding; the handsome Cypripedium × Baron Schröder (œnanthum superbum × Fairrieanum), and various others.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, sent a good Cattleya Gaskelliana alba, the handsome C. × Maroni (velutina × Dowiana) and Oncidium Papilio.

MANCHESTER & NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of this Society was held at the Coal Exchange, Manchester, on September 6th last, when the following members of the Committee were present:—Messrs. J. Leemann (in the chair), Duckworth, Holmes, Stevens, Upjohn, and Weathers (Hon. Sec.).

G. Shorland Ball, Esq., Wilmslow (gr. Mr. Gibbons), showed Cypripedium Lawrenceanum × Rothschildianum (A.M.) and C. × Harrisianum superbum × concolor.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a fine group, for which a Silver Medal was awarded, and amongst which were Lælia lobata × Cattleya Gaskelliana, Lælio-cattleya × elegans (A.M.), Lælio-cattleya × Clonia, var. Amy Leemann (F.C.), Cattleya punctulata, and Cypripedium × Lawrebel.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed Cypripedium × Massaianum (F.C.) and C. Charlesworthii superbum.

Messrs. John Cowan and Co., Gateacre, staged a very fine group of Dendrobium Phalænopsis, for which they were awarded a Silver Medal. They also showed Oncidium Forbesii magnificum and Cypripedium × Hermione.

Messrs. F. Sander and Co., St. Albans, showed Lælio-cattleya × elegans Turneri, Cattleya bicolor splendens (A.M.), and C. b. viride.

At the meeting held on September 27th, a number of fine things were exhibited, and the awards included four First-class Certificates, twelve Awards of Merit, and two Cultural Certificates. The members of the Committee present were :—Messrs. G. Shorland Ball (in the chair), Holmes, Cypher, Robson, and Weathers (hon. sec.).

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), staged a very fine group, for which he was awarded a Silver-gilt Medal, and amongst which was the distinct Odontoglossum crispum Amy (A.M.), Cattleya × Fabia var. Brunoy (labiata × Dowiana aurea), a very beautiful flower (F.C.), C. × Maroni (A.M.), C. × Hardyana, and C. Bowringiana.

Richard Ashworth, Esq,, Newchurch (gr. Mr. Pidsley), showed Cypripedium × gigas Corndean var. (A.M.), C. insigne Wallacei, and Miltonia candida grandiflora (A.M.).

T. Statter, Esq., Stand Hall (gr. Mr. Johnson), showed a very fine plant of Dendrobium Victoria-Regina (Cult. Cert.), a Lælio-cattleya derived from C. Bowringiana × L. tenebrosa, and Cattleya × Ashtoni.

E. O. Schneider, Esq., Whalley Range (gr. Mr. Hunt), showed a fine form of Cattleya granulosa Schofieldiana.

A. J. Lees, Esq., Stratford (gr. Mr. Jones), showed Cypripedium Charlesworthii, and Lælia pumila præstans.

Mr. P. Weathers, Botanical Gardens, Manchester, showed Cypripedium × Harrisianum superbum (A.M.), and C. × œnanthum superbum.

Mr. James Cypher, Cheltenham, showed a fine specimen plant of Cattleya × Mantini inversa (A.M. and Cult. Cert.), and Cypripedium × Leonie (A.M.). This exhibitor also staged a small group for which he was awarded a Vote of Thanks.

Messrs. Charlesworth & Co., Bradford, staged a fine and interesting group, for which a Silver Medal was awarded, and amongst which were Cypripedium × Maudiæ (Lawrenceanum Hyeanem × callosum Sanderæ), a flower fairly intermediate between the parents but leaning rather more to the Lawrenceanum than to the callosum parent (F.C.), C. × Lawrebel (F.C.), C. × Mrs. Fred Hardy (A.M.), C. Charlesworthii album (F.C.), Cattleya Eldorado alba, Lælio-cattleya × intermedio-cinnabarina, L.-c. Mandarin, and two very fine dark coloured Lælia præstans both of which received Awards of Merit.

Mr. John Robson, Altrincham, showed Dendrobium Phalænopsis albens (A.M.), and a spotted Odontoglossum crispum.

Mr. A. J. Keeling, Bingley, showed a very fine Cypripedium Charlesworthii magnificum (A.M.).

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, Buckingham Gate, Westminster, during October, on the 9th and 23rd respectively, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

Meetings of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on Friday, October 12th, and Thursday, October 25th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

Baron Sir Henry Schröder, who possesses such a fine collection of Orchids at The Dell, Egham, near Windsor, celebrated his Golden Wedding, on Wednesday, September 19th last, and received from the Queen the decoration of Commander of the Royal Victorian Order, accompanied by an autograph letter from Her Majesty. The German Emperor telegraphed his congratulations in warmest terms, and conferred upon Baron Schröder the Crown Order of the First Class; and the German Empress presented to the Baron and Baroness a magnificently bound German Bible, with autograph inscription.

A flower of Odontoglossum × Cooksoni roseum is sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. It is another seedling from O. Hallii ♀ and O. crispum roseum ♂, and differs from the earlier ones is having a rosy tinge at the back of the sepals. The sepals are blotched and the petals spotted with dark brown on a yellowish white ground.

A magnificent form of Cattleya Dowiana is sent from the collection of Dr. Cranstoun, Broad Street, Ludlow, by Mr. Godfrey. The sepals and petals are ivory white, and the lip large and veined throughout with yellow except a small area in front. It is said to be one of a dozen purchased from Messrs. Veitch last year. Seven others are in bud.

A fine flower of the handsome Cypripedium × triumphans is sent from the collection of F. M. Burton, Esq., Highfield, Gainsborough, also a good C. × Crossianum, in which the petals and lip are well coloured with warm shining brown.

A very fine Cypripedum × Chapmanii is sent from the collection of N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne, by Mr. Murray, who remarks that it is a very good grower.

We should be glad to receive a flower of any of the rarer Cypripedium Fairrieanum hybrids. There are several which we have not seen, and of which we believe that only a few plants are yet in existence.

THE HYBRIDIST.

CATTLEYA × MACÆNAS.

A VERY distinct and handsome hybrid has been raised in the collection of T. W. Thornton, Esq., Brockhall, Weedon, from Cattleya Warscewiczii Sanderiana ♀ and C. superba ♂, and must be considered as a form of the above, originally raised by Messrs. Veitch. It bears a great general resemblance to the natural hybrid C. × Brymeriana, but the flower is considerably larger, as would be expected. It measures 6½ inches in diameter, and the petals are 1¾ inches broad; the colour of the perianth-segments being bright lilac-purple, and the lip has a very pale throat, with the front lobe and apex of the side lobes rich purple. The seeds were sown in July, 1892.

LÆLIO-CATTLEYA × STELLA.

Raised in the same collection as the preceding, from Lælia grandis ♀ and Cattleya intermedia ♂, the seeds being sown in December, 1892. It is fairly intermediate in shape and colour, the sepals and petals being tinged with a rosy hue, and the lip less strongly three-lobed than C. intermedia, with the front lobe light purple, and much crisped. The flower is at present rather small, but it will probably improve as the plant becomes stronger.

LÆLIO-CATTLEYA × ALCIDES.

Another of Mr. Thornton's hybrids, raised from Cattleya Dowiana aurea ♀ and Lælio-cattleya × elegans ♂, from seed sown in July, 1892. The flower is six inches in diameter, with the sepals and much broader petals lilac-rose, and the nearly entire lip deep crimson-purple, except the basal part, which is paler, and there is a trace of yellow veining in the throat. It is a very handsome thing, and in shape recalls Lælia purpurata, one of its grandparents rather than its direct parents.

LÆLIO-CATTLEYA × GALATEA.

This is a charming and very richly-coloured hybrid raised by Messrs. Charlesworth & Co., Heaton, Bradford, from Cattleya granulosa Schofield-iana ♀ and Lælia Dayana ♂. It most resembles the former in shape, but has completely lost the green colour and spots. In fact the sepals and petals are rich rose purple, and unspotted, while the front lobe of the lip and apex of the side lobes are dark crimson-purple. The side lobes are strongly infolded and overlap at the apex, and the basal part is white tinged with light rose. The isthmus of the lid is somewhat mottled with whitish yellow, and the keels of L. Dayana seem to be quite lost. The flower is slightly smaller than that of C. granulosa. It is a most promising thing.

ORCHID PORTRAITS.

AERIDES MULTIFLORUM, Roxb., VAR. LOBBII, Veitch.—*Lindenia*, t. 706.

CATTLEYA × F. W. WIGAN.—*Gard. Mag.*, 1900, pp. 610, 611, with fig.

CATTLEYA GRANULOSA VAR. SOUVENIR DE RAYMOND STORMS-—*Lindenia*, t. 710.

CATTLEYA TRIANÆ VAR. RIMESTADIANA.—*Lindenia*, t. 708.

CYPRIPEDIUM × CYRIS.—*Journ. Hort.*, 1900, xli., p. 263, fig. 69.

DENDROBIUM PHALÆNOPSIS VAR. HOLOLEUCA. — *Gard. Chron.*, 1900, xxviii., pp. 239, 240, fig. 69. VAR. SCHRŒDERIANUM.—*l.c.*, p. 238, fig. 68, and striped form, p. 241, fig. 70.

HABENARIA SUSANNÆ.—*Journ. Hort.*, 1900, xli., p. 239, fig, 63.

LÆLIA SUPERBIENS, Lindl.—*Lindenia*, t. 709.

LÆLIO-CATTLEYA × IMPERATRICE DE RUSSIE.—*Rev. Hort.*, 1900, p. 516, with plate.

MILTONIA VEXILLARIA VAR. CHELSONENSIS.—*Lindenia*, t. 707. VAR. LINDENIÆ.—*Lindenia*, t. 712.

ODONTOGLOSSUM × ADRIANÆ, COUNTESS OF MORLEY.—*Journ. Hort.*, 1900, xli., pp. 216, 217, fig. 56.

ODONTOGLOSSUM CRISPUM VAR. BÉTHUNEANUM.—*Lindenia*, t. 705.

ONCIDIUM × ORNITHORHYNCHUM. — *Garden*, 1900, lviii., p. 210, with fig.

RENANTHERA COCCINEA.—*Amer. Gard.*, xxi., p. 601, fig. 129.

SCUTICARIA KEYSERIANA.—*Journ. Hort.*, 1900, xli., p. 217, fig. 57. This is Scuticaria Steelii, Lindl.

STAUROPSIS FASCIATA, Benth.—*Lindenia*, t. 711.

CORRESPONDENCE, &c.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily).

F. M. B. The seedling purchased as Cypripedium villosum × Rothschildianum cannot have that parentage, and we do not recognise it.

T. L. M. Dendrobium pachyglossum, Par. & Rchb. f. Native of Burma. Epidendrum not yet identified.

H. J. R. Zygopetalum pallidum, Rolfe. The other is not yet named.

R. G. C. Cattleya Loddigesii.

Mrs. J. H. A pretty form of Odontoglossum crispum, but we do not know if it has a name.

O. O. W. The insect found eating Dendrobium Wardianum is some member of the grasshopper or locust family which may have come home in the pupa state, but is not likely to establish itself.

Photographs received, with thanks. G.S.B., J.G., H.R.H., O.A.

F. Cl. Odontoglossum purum and Oncidium cucullatum.

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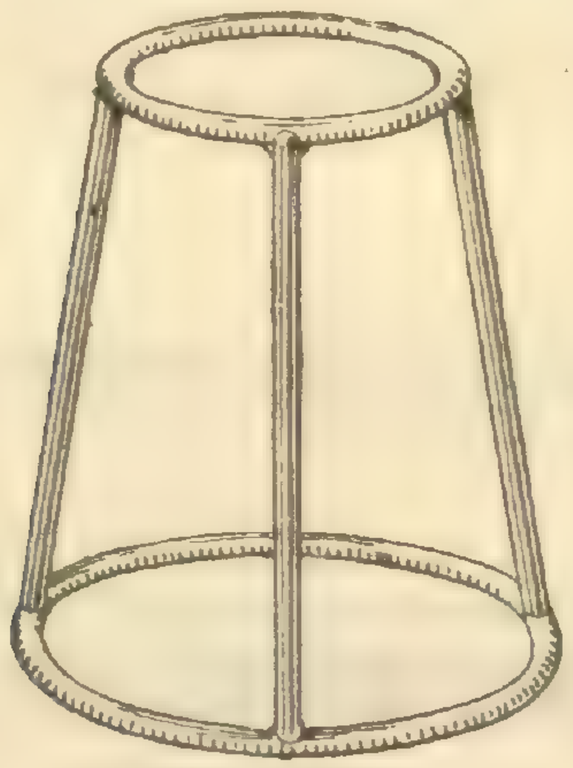

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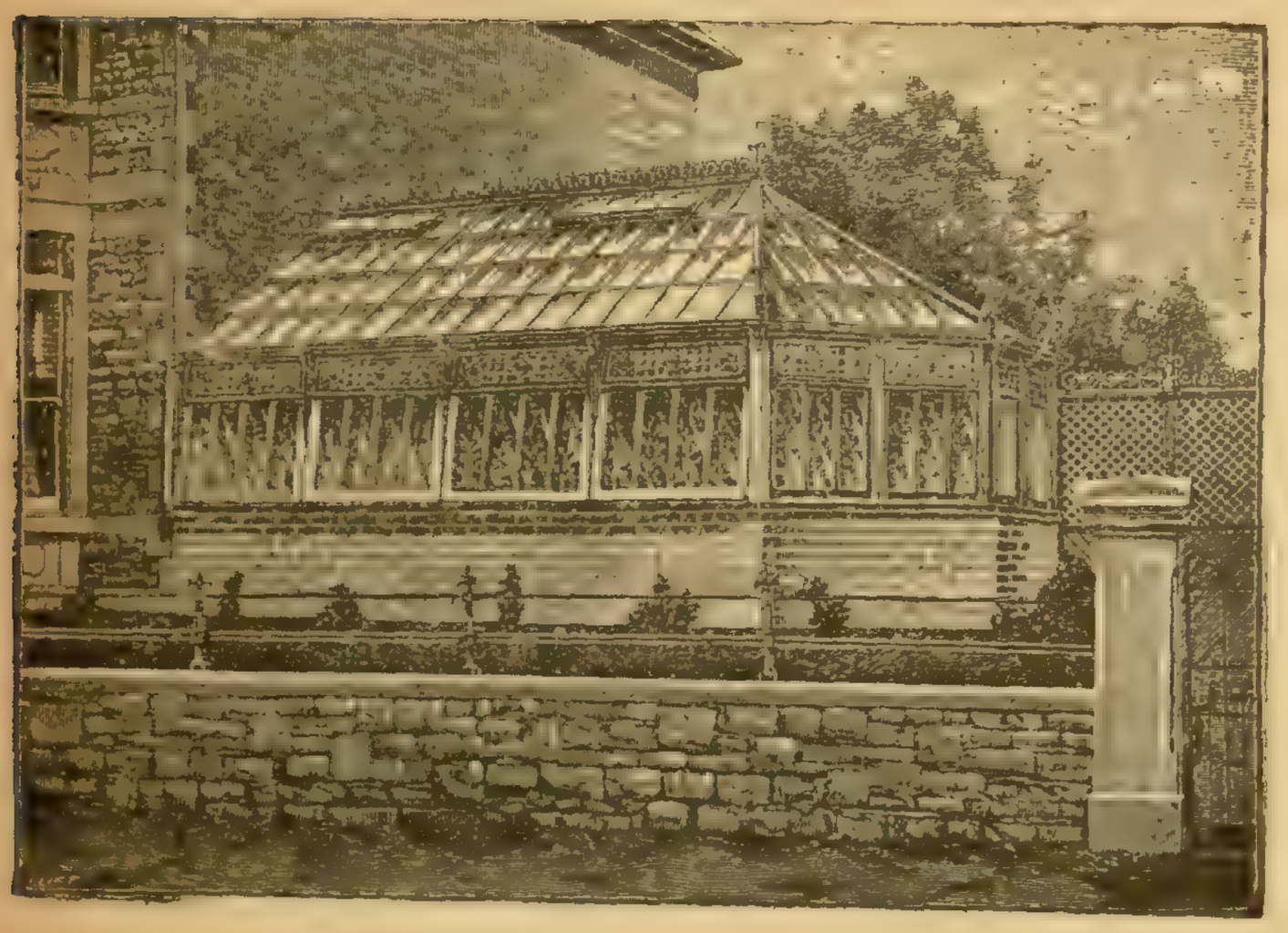

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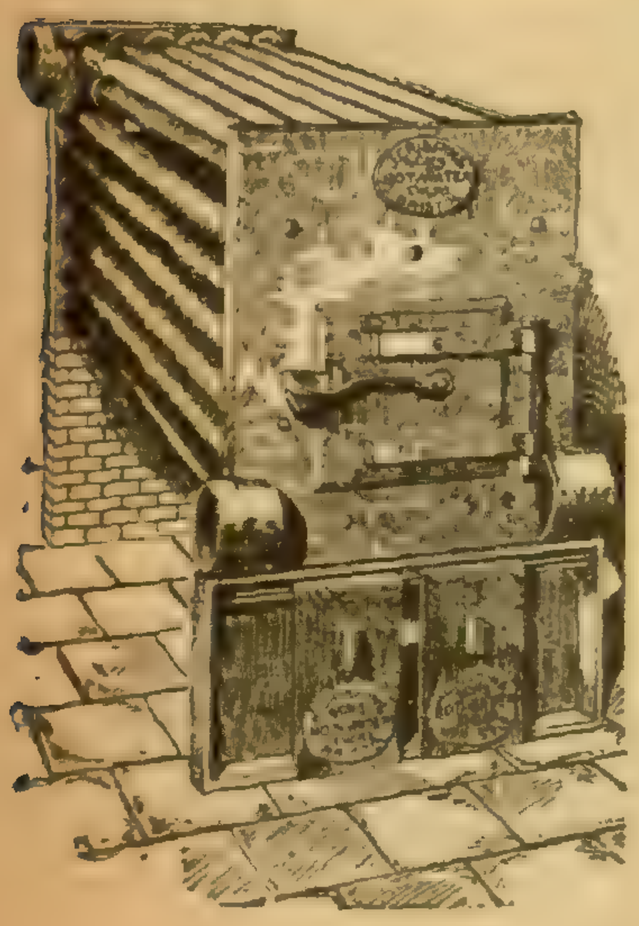

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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VOL. VIII.] *NOVEMBER*, 1900. [No. 95.

DIES ORCHIDIANÆ.

I AM glad to see by the notes on page 304 that the question of Orchid diseases is likely to be followed up. It is a question of great practical importance, and even the best cultivators cannot always regulate their treatment so as to prevent an outbreak, nor yet successfully grapple with it. Insect pests are bad enough, but one now knows pretty much what they are, and how to deal with them, which is not the case with fungal diseases. If Dr. Burtt can tell us just what they are, and the phases of their life history, we shall be much better able to deal with them. In many cases when an outbreak occurs, that is when the effects become visible to the naked eye, the mischief is already done, but if we knew how to detect the very earliest symptoms the application of a remedy might be attended with much more success. It will be interesting to know just how many enemies we have, for I gather from the notes on the subject that there are several of them. Let us hope that all will ultimately come under investigation.

There is another matter which excites my curiosity, and it of less practical importance I snould still like to see the subject investigated. On page 303 I see a note of some supposed hybrids between Sobralia macrantha and Cattleya gigas, though when they flowered they proved identical with the former, which was the mother plant. Several other similar cases have been recorded. I remember seedlings from Epidendrum × O'Brienianum crossed with a Dendrobium, but when they flowered no trace could be found in them of the Dendrobium. Then Lælia cinnabarina crossed with Cypripedium villosum reproduced only the former, while the reversed cross only yielded the latter. I believe that someone has suggested that the whole matter is a huge joke, but some of the experimenters seem to have taken the matter quite seriously, and

carried out the operations as carefully as if they expected a 50-guinea hybrid as the result. In the case ot *Zygopetalum* crossed with Odontoglossum, I believe that the experiment has been repeated more than once without varying the result, and I wish that someone could give a satisfactory explanation of the matter.

A very interesting little group of five Paphiopedilum Fairrieanum hybrids was exhibited at the Royal Horticultural Society's meeting at the Drill Hall, on October 23rd, from the collection of R. I. Measures, Esq., of Camberwell, the second parents being P. insigne, Spicerianum, × Leeanum, purpuratum, and tonsum, all but the last-named being autumn or winter flowering kinds. The hybrids were naturally very dissimilar, but all showed strong evidence of their Fairrieanum parentage, which gave them a sort of family resemblance to each other. There was, unfortunately, no example of the mysterious parent for comparison, which would have rendered the group all the more interesting. It would probably be difficult to get the whole series of Fairrieanum hybrids in flower together, as a few of them usually flower in the summer, but if it could be done the group would be worth going some distance to see.

A correspondent has called attention to several recent records of exhibits at the meetings of the Manchester Orchid Society under such names as Cattleya Mossiæ × Lawrenceana, Cypripedium Lawrenceanum × Rothschildianum, and C. × Harrisianum superbum × concolor, and wonders why such names are used instead of their proper specific names, Cattleya × Lawre-Mossiæ, Cypripedium × Mahleræ, and C. × Watsonianum. I cannot suggest a reason unless it is that they were exhibited under such names. The same reason, of course, serves to explain why some old hybrids appear under new names, and some new hybrids under old names; both of which are pointed out. But hybrids are becoming so numerous that a reporter who wishes to avoid this sort of thing must go round with a sheaf of records in his pocket, and even then the list soon gets out of date unless every novelty is posted up as it appears, which latter is impossible for many people. Perhaps the exhibitors in question feared to add to the rapidly growing synonymy.

The illustrations given in the last number seem to me specially interesting as examples of good culture. The Cycnoches pentadactylon, particularly, is a specimen which it would be difficult to match anywhere except in a wild state. Whether it was a strong native specimen flowering for the first time after importation does not appear, but if it was grown at home from a small piece it is certainly exceptional.

I have not yet heard of the batch of Paphiopedilum Fairrieanum seedlings which I once remarked would be worth raising, but I see that we have now a batch of P. insigne Sanderæ raised true from seed. We have also a hybrid from P. callosum Sanderæ and P. Lawrenceanum Hyeanum, in which the albinism of both parents is reproduced. How would it be to cross some of these beautiful forms with that other charmin albino, P. bellatulum album?

ARGUS.

ODONTOGLOSSUM × WATTIANUM.

THE figure of Odontoglossum × Wattianum var. Crawshayanum which has just appeared in the *Gardeners' Chronicle* (1900, xxviii., p. 286, fig. 83), shows well its general agreement with the wild type and its varietal differences, but Mr. Crawshay's note gives one the impression that he alone formed the opinion as to its parentage which he ultimately proved by his most interesting experiment, and this both by what he says and what he omits. He remarks:—"There were at the time of its introduction few, if any, who thought of Harryanum as one of the parents, as Mr. Sander and Mr. Rolfe published their opinions upon luteopurpureum and Lindleyanum. I recall stating, on May 25th, 1893, that I would prove my immediately formed opinion as to Harryanum by producing it from it and Lindleyanum. I have had the satisfaction of so doing." This, however, was about three years after the first description appeared—when I had not seen a living flower—and long after the *Reichenbachia* figure was published, when I pointed out in the Latin description that the plant was intermediate between O. Lindleyanum and O. Harryanum, though I then knew nothing of the habitat of the latter. The remark that "I felt bound to give up the idea of its hybrid origin" was really a concession to the opinion of the collector. It was not till afterwards that I saw a living flower, when I found as unmistakable evidence of the presence of O. Harryanum as I had previously done of that of O. Lindleyanum. The discussion related at page 301 took place long before Mr. Crawshay made his experiment, but I was not at liberty to publish the information at the time. In 1893 I personally urged Mr. Crawshay to make a number of crosses which would prove the parentage of certain natural hybrid Odontoglossums, and my impression is that this particular one was among them, though I cannot now be quite certain. I should not refer to the point at all, except for the fact that Mr. Crawshay cites my first opinion, which was only half correct, but omits the later one, though he carefully mentions my note about the habitat, which occurs in the very next sentence. Mr. Crawshay deserves the highest credit for his success, but his remarks, so complete in every other detail, fail to convey a correct impression of the facts.—R. A. R.

CYPRIPEDIUM INSIGNE SANDERÆ FROM SEED.

"In February 1895, Mr. H. J. Chapman fertilised Cypripedium insigne Sanderæ with its own pollen in Mr. R. I. Measures' Collection, at Camberwell. The seed ripened in the spring of 1896, and germinated in a few days, the seedlings being pricked off in the autumn of the same year. The plants have grown satisfactorily since, and on October 7th the first flower opened. It has the true character of the typical variety, but appears to be more vigorous than the parent, which is the plant originally introduced."—*Gard. Mag.*, 1900, p. 666.

[This note is very interesting, and supplies further evidence that albinos comes true from seed when fertilised with their own pollen. Two previous cases are those of C. callosum Sanderæ and C. Lawrenceanum Hyeanum, both raised true from seed by Mr. Norman C. Cookson, as recorded in these pages. And there is the equally significant case of C. × Maudiæ (described at page 308), a hybrid raised by Messrs. Charlesworth & Co. from C. Lawrenceanum Hyeanum crossed with the pollen of C. callosum Sanderæ, which shows that albino hybrids may be raised from albino forms of the parent species. Had one parent been the normal form there might have been reversion, but as it is, C. × Maudiæ is as true an albino as either of its parents. Such evidence is important to breeders.—Ed.].

THE HYBRIDIST.

PAPHIOPEDILUM × HELEN.

This is a distinct and pretty hybrid, raised in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, between P. Dayanum and P. Charlesworthii, and we have now received a flower from Mr. Young. It was exhibited at the R. H. S. meeting on October 23rd as Cypripedum × Helen. It shows very clearly its parentage, the dorsal sepal being reticulated with rose on a white ground, except at the rather darker base, and the staminode ivory white, while in shape these parts, as well as the lip and petals, approach rather nearer to P. Dayanum, whose strongly ciliate petals can be clearly traced in the hybrid. It is interesting to find that the remarkable porcelain white staminode and beautiful rose-coloured dorsal sepal of P. Charlesworthii come out so strongly in its hybrids, which are becoming a very interesting little group, and one likely to receive many accessions in the near future.

Lælio-cattleya × Ella.

When describing Lælio-cattleya × Stella at page 319 we overlooked the fact that the name had already been used for a hybrid between Lælia crispa and L.-c. × elegans. The present one may be renamed as above.

SOPHRONITIS GRANDIFLORA AND ITS VARIETIES.

An exceptionally fine flower of Sophronitis grandiflora purpurea is sent from the collection of Dr. Hodgkinson, The Grange, Wilmslow, cut from the plant which received an Award of Merit from the Manchester and North of England Orchid Society on October 12th last, under the name of S. grandiflora rosea. It is, however, much larger and darker in colour than that variety. The flower sent measures more than 3½ inches in diameter. and the petals are over 1½ inches broad, the colour being a brilliant carmine-purple, or nearly cerise, with some darker veining on the lip. It came out of an importation made by Messrs. F. Sander & Co. The form has long been known in gardens, and was described by Reichenbach, in 1878, under the name of Sophronitis purpurea (*Gard. Chron.*, 1878, ix., p. 462), as follows:—"This is the rare but well-known short-bulbed Sophronitis grandiflora of the English Orchidists. I have known it for more than thirty years, having obtained it in Herr Hofrath Keil's garden at Leipsic, which is under M. Tube's skilful management. It is immediately known by its short, nearly elliptical leaves, blunt petals, and the purplish colour of its flowers. I had a long and interesting correspondence about it with Mr. Day some time ago. I have also had in London many conversations about the plant with other Orchidists, and finally Sir Trevor Lawrence has twice sent me excellent materials. *Sed manet alta mente repostum*. My hope that Sir Trevor would forget the question has failed, and I am urged to give a name, as Sir Trevor is not accustomed to growing two different things under the same name. There is no more avoiding the long-avoided crisis—a name has just been given. Now we have three things, the long-bulbed, great flowered S. grandiflora, the small-flowered scarlet S. militaris, and the short-bulbed, purple-flowered S. purpurea. If they are not species they are decidedly very distinct things for gardens."

These forms are now generally considered as varieties of one somewhat variable species. S. grandiflora purpurea for some reason still remains rare in cultivation, and the only figure of it which we remember is in Warner's *Select Orchidaceous Plants*, iii., t. 3, where the lower of the two figures, labelled S. grandiflora, agrees very well with the flower sent by Dr. Hodgkinson. We have seen a form of a more distinctly purple shade.

S. grandiflora rosea (*Garden*, xxv., pp. 178, 474, t. 643) is a very pretty variety, of a clear rose-pink shade, which flowered in the collection of J. T. Peacock, Esq., Sudbury House, Hammersmith, in 1884. It is a short-bulbed form, with rather smaller flowers than the preceding, and lighter in colour.

The latest addition to the cultivated members of the genus is Sophronitis Rossiteriana, which was described by Rodrigues, in 1877 (*Gen. et Sp. Orch. Nov.*, i., p. 77). It was discovered at Barbacena, in the province of Minas

Geraes, and living plants have recently been sent by M. Binot, of Petropolis, Brazil, to M. A. A. Peeters, of Brussels, with whom they flowered in January, 1898. It is figured in the *Dictionnaire des Orchidées*. It has much of the general appearance of S. grandiflora, but differs in having light yellow flowers striped with orange, and, it is said, in having the little, scale-like callus at the base of the lip bilobed instead of entire.

There is one other species not yet introduced to cultivation, namely S. Wittigiana (*Rodr. Gen. et Sp. Orch. Nov.*, ii., p. 159). It has the general habit of the preceding, and the flower is very similar in shape, but the colour is a peculiar lilac-purple, and the flower peduncles are about three to four inches long, giving it a very distinct appearance. It would be interesting to see it introduced to cultivation.

S. grandiflora is one of the most beautiful Orchids in cultivation, and its popularity may be judged from the fact that upwards of twenty figures of it have been published. Warner remarks:—"This lovely Orchid may be described as an epitome of beauty. Its habit of growth is unsurpassed for neatness in the whole tribe of epiphytes, and its tufted masses of solid-looking, dark green leaves form an admirable relief to the comparatively enormous blossoms, which are moreover of the richest colour." It is also of the easiest possible culture if properly treated in a Cool house, though for many years after its introduction it was regarded as a very capricious plant, because wrongly treated. Its history was given by Mr. J. O'Brien in the *Gardeners' Chronicle*, in 1884, in an interesting note:—

"Collected and sent home alive to this country for the first time by Mr. Gardner, in 1837, not even his description of the high altitude in the Organ Mountains of Brazil (7,000 to 8,000 ft., near Rio Janeiro), could save it from being always designated a stove epiphyte. . . . . No more misleading description could be given of the plant, nor one likely to be more fatal to the production of its beautiful flowers. In the early years of its attempted cultivation in this country the fresh imported plants were frequently heard of as flowering here and there, and were always admired, but it soon got found out that the greater part of the plants quickly died out, and at last the imported plants were received by many in the full belief that they must necessarily die out, too, in a short time. That the cause of this great mortality among them arose from their being grown in hot houses is proved by the fact that during all the time that such quantities were being lost in heat, a few were being cultivated very successfully in cold houses; for example, Mr. Sillem, of Laurie Park, has in his possession now a grand specimen which sprung from a very tiny plant received over twenty years ago, and which has been grown ever since as a cold greenhouse plant. Not before it got generally known that S. grandiflora grew best in a cold house did the plant get really at home in this country."

PHALÆNOPSIS PALLENS.

It is interesting to record that, after a long interval, this rather mysterious Phalænopsis has turned up again. A plant received, with the name Phalænopsis cornu-cervi, it is believed from the Calcutta Botanic Garden, in 1895, together with other Malayan species, has just flowered at Kew, and was immediately seen to be something very distinct. On comparison it proves identical with a plant described by Lindley, in 1850, under the name of Trichoglottis pallens (*Journ. Hort. Soc.*, v., p. 34). It was described as "a native of Manilla; received from His Grace the Duke of Devonshire's collection at Chatsworth. I observed this curious species in flower at Chatsworth in November last. It was then a dwarf, erect plant, with oblong distichous leaves, and a lateral flower or two, not quite two inches in diameter, pale yellowish green, with delicate brownish spots and a white lip. The latter organ was oblong, with a white, shaggy crest on the upper side, and a pair of short, yellowish, scimitar-shaped segments standing erect near the base. Within these were a pair of forked callosities, one placed before the other in the centre, but no sac or pouch was found between them." A single flower is preserved in Lindley's Herbarium, together with a coloured sketch of the lip and pollinarium. The name was changed by Reichenbach, in 1860, to Stauropsis pallens (*Hamb. Gartenz.*, xvi., p. 117), and in 1864 to Phalænopsis pallens (*Walp. Ann.*, vi., p. 932). Until now the only other plant that I have heard of flowered in the Glasnevin Botanic Garden in 1886. When I wrote my "Revision of the Genus Phalænopsis" I alluded to P. pallens as a plant described in 1850 which seemed to have "since been lost sight of" (*Gard. Chron.*, 1886, xxvi., p. 276). Mr. F. W. Moore then wrote that he had a nice plant which had flowered that season, and he much regretted that he was unaware of the flowers being of use, or he would have sent them. Unfortunately the plant afterwards died, and I never knew more of its history, and cannot say how far it was identical with the original plant.

The present plant in any case agrees with the original, and its history suggests an error in the recorded locality. Had it really come from Manila it would almost certainly have been met with again long before this, and the circumstance of its re-discovery suggests a new idea of its origin, namely, that it may be a natural hybrid. It bears some striking resemblances both to P. cornu-cervi and P. sumatrana, which are both Malayan species, found in several localities, and may occur somewhere intermixed. P. cornu-cervi and P. violacea grow and hybridise together in Perak, for Mr. Ridley remarks:—"I have seen two examples of a hybrid found in a wild state in Perak" (*Journ. Linn. Soc.*, xxxii., p. 352), though he makes no mention of P. × Valentini, which Reichenbach, on the suggestion of the late

Mr. John Day, described as a natural hybrid between the two (*Gard. Chron.*, 1883, xx., p. 262). They also grow together in Borneo, and we also know that at Palembang, in Sumatra, P. violacea occurs associated with P. sumatrana, so that there is good ground for suspecting that the last-named and P. cornu-cervi also grow together. A hybrid between them would be expected to be intermediate in size, to have very pale yellow sepals and petals somewhat barred with brown, to have the front lobe of the lip dilated at the apex and more or less toothed, with the hairs on the face somewhat lax, and all these characters are found in the plant under notice. Such a plant may well be collected out of bloom as P. cornu-cervi, and thus the known facts warrant the above suggestion as to its origin and parentage. It would be interesting to have the matter confirmed by experiment.

R. A. ROLFE.

CATTLEYA × RESPLENDENS VAR. KERCHOVEANA.

UNDER the name of Cattleya × Kerchoveana, M. Cogniaux describes a hybrid raised by M. Peeters, of St. Gilles, Brussels, from Cattleya Schilleriana crossed with the pollen of C. granulosa var. Schofieldiana (*Chron. Orch.*, p. 308). The sepals and petals are undulated, brownish yellow, spotted with dark brown, and the lip deeply trilobed, with the side lobes pale yellow striped with purple, and the front lobe broad at the apex, and whitish, with prominent verrucose, bright purple nerves. A concluding note states that C. × resplendens, Rchb. f. "is considered to be a natural hybrid derived from the same parents, but this is scarcely probable, because it is very different from the present one." Curiously enough, the original description of C. × resplendens was reproduced on page 296 of the present volume, with an inquiry as to what has become of the plant, and on comparing the two descriptions I find that most of the characters agree very well. Whether the novelty has the narrow petals of C. Schilleriana is not stated, but it appears to be rather more spotted than the wild form, of which, so far as I can judge, it must rank as a variety. Unfortunately, the original, type is sealed up at Vienna, owing to Reichenbach's dog-in-the-manger policy, and the point cannot yet be cleared up. My own impression is that M. Peeters has proved the parentage of C. × resplendens. According to the descriptions, the lip in the two plants has the same essential character, and no different combination of species which grow wild at Bahia would account for the characters of C. × resplendens, as described by Reichbach. It is just possible that in such a showy genus as Cattleya we may have the origin of the entire series of natural hybrids demonstrated artifically.

R. A. ROLFE.

PAPHIOPEDILUM CHARLESWORTHII.

A CURIOUS flower of this charming little species is sent from the collection of J. U. Hodgson, Esq., Higher Bebington Hall, Cheshire, in which the light green lower sepal has on either side a rose coloured wing, the colour and texture being precisely that of the upper sepal. Mr. Hodgson remarks that the plant has six flowers, all of which have one rose-coloured wing, some being on the right side and some on the left, while the one sent has the peculiarity on both sides. The plant was purchased recently in a

FIG. 45. PAPHIOPEDILUM CHARLESWORTHII. FIG. 46. P. SPICERIANUM.

rather starved condition, but whether this has anything to do with the peculiarity is uncertain, especially as the flower is perfect in other respects. The flower shown in the lower right-hand corner of our illustration is a still more remarkable form, which appeared in 1896 in the collection of Dr. A. W. Hoisholt, of Stockton, California. In this case the lower sepal was twice as broad as usual, and of the same colour as the upper. Forms of P. Lawrenceanum and P. insigne are also known in which the lower sepal

simulates the upper in form and colour, and though morphologically abnormal the beauty of the flower is rather enhanced than not. A very curious monster of P. Charlesworthii appeared in the collection of Oakes Ames, Esq., North Easton, U.S.A., in 1896, and is described at page 44 of our fifth volume. It had the lower sepal divided, half of the lip wanting, the stigma petaloid on one side, with other displacements of parts. Forms with two lips and twin-flowered scapes have also been mentioned in our pages. Our illustration also includes a second flower of P. Charlesworthii (on the left), and two of P. Spicerianum (in the centre), and the latter species, though so different in shape and colour, is on the whole the nearest ally of P. Charlesworthii, which it closely resembles when out of flower.

ORCHIDS IN PENANG.

A PAPER entitled "A Botanical Excursion to Gunong Jerai (Kedah Peak)," by H. N. Ridley, F.L.S., Director of the Singapore Botanic Garden, published in the recent number of the *Journal of the Asiatic Soeiety*, Straits Settlement Branch, contains some interesting notes on the Orchids met with during a journal to Kedah Peak, made in June 1893, in company with Mr. Curtis. Kedah Peak is described as a great isolated mountain which forms a conspicuous object in the view from Penang.

"Orchids," observes the author, "are far more numerous here than on Mount Ophir, and in some places form an important portion of the vegetation. In some spots the ground was so thickly covered by them that one was nearly up to the waist in them. Among the more striking were Spathoglottis aurea, Cypripedium barbatum, Dendrobium sanguinolentum and more commonly the pale ochre-coloured form cerinum, D. Hughii, with large thin white flowers tinted with violet, and D. revolutum. Bulbophyllums were very abundant. Among them were B. longiflorum with large pink striped flowers with an orange lip, and B. hispidum, only met with at the very summit, with clusters of fairly large deep red hairy flowers with a very putrid odour. Upwards of fifty kinds of Orchids were collected here, of which eight are peculiar to the range."

At the outset the voyagers were delayed by a storm, and had to take refuge on the island, where some collecting was done. "Orchids," we are told, "were not wanting on the trees by the beach. Aërides odoratum seemed common and was in bud, and some fine plants were secured. It seems to have a liking for the sea shore, as I have several times found it abundantly on the smaller islets in the Straits in similiar localities. Eria bractescens, Cirrhopetalum Medusæ, the common Cymbidium (aloifolium), and the pigeon Orchid (Dendrobium crumenatum) were also found, but were not in flower."

THE HISTORY OF ORCHID CULTIVATION.

Continued from vol. ii., page 136.

OUR preceding papers traced the history of Orchid cultivation from 1732, when Bletia verecunda flowered in the garden of a Mr. Wager, down to 1825, when we find a collection of about 180 tropical kinds cultivated in the Horticultural Society's garden at Chiswick.

In the latter year, also, Messrs. Loddiges had in their stoves at Hackney eighty-four species belonging to about thirty genera. The compost used, we read, was a mixture of wood and moss, with a small quantity of sand; and the Orchid stove was heated by brick flues to as high a temperature as could be obtained by this means, with the help of a tan bed in the middle, kept moist by watering, and from which a steamy evaporation constantly arose, without any ventilation.

Such a method of treatment was then generally followed, but about this time, according to Mr. John Smith, a change was made in the Royal Gardens, Kew. A portion at the end of the propagating house was set aside, and a bed was formed consisting of loose turfy soil, interspersed with small portions of tree stems, on which the Orchids were placed. For a time many of them are said to have grown freely, but the net result was that they only lived on a little longer than they had previously done. Shortly afterwards species were sent to Kew by Mr. Lockhart, Curator of the Botanic Garden, Trinidad, some of the plants being attached to portions of branches as cut from the trees. Instructions as to how they should be treated were also sent, and this eventually led to some improvement in their culture generally.

Two notable plants not previously mentioned which flowered for the first time in 1825 were figured in Hooker's *Exotic Flora*. Catasetum tridentatum (t. 90, 91) was sent from Trinidad by Baron de Schack, and flowered in the Botanical Garden at Liverpool. The explosive character of the anther in this genus seems now to have been noticed for the first time, for the author remarked:—"Mr. Henry Shepherd informs me that 'on touching the extremity of the column with a pin, the anther case flies off with an elastic force, and takes along with it the pollen mass, the gland at the base of which is covered with a glutinous substance, by which it adheres to anything that it comes in contact with.'" The species was afterwards identified with C. macrocarpum. Dendrobium Harrisoniæ (t. 120), now known as Bifrenaria Harrisoniæ, was figured from a drawing made by Mrs. Arnold Harrison, of Aigburth, Liverpool, in whose collection it flowered. The author remarked:—"Mrs. Harrison received it two years ago from her brother at Rio de Janeiro; and the species appearing to me entirely new, I cannot do better than honour it with the name of an indi-

vidual who has not only introduced this, but many other new and rare plants to our gardens, and who cultivates them with great success."

Among the novelties figured and described in the *Botanical Register* for 1826 may be mentioned:—Eria rosea (t. 978), sent to the Horticultural Society by Mr. J. D. Parkes in 1824, and flowered at Chiswick in October of the following year; Megaclinium falcatum (t. 989), sent from Sierra Leone by Mr. George Don in 1822, and flowered, for the first time, in April, 1826, in the stove at Chiswick, where it is said to grow "more readily than most of its compatriots, which are usually extremely impatient of cultivation"; Eulophia streptopetala (t. 1002), which flowered in Mr. Colville's Nursery in March, 1826; Oncidium pubes (t. 1007), sent from Rio de Janeiro by David Douglas in 1824, and flowered at Chiswick in March, 1826; and Spiranthes grandiflora (t. 1043), sent home with the preceding, and flowered at Chiswick in October, 1826. Catasetum cristatum was also figured for the first time (t. 966), and is interesting on account of the first notice of dimorphism among the flowers, for Lindley speaks of "a curious monster of this plant which we observed on an individual in the Horticultural Society's Garden. Among flowers of the ordinary structure, two or three others were observed in which the labellum was precisely of the same nature as that of Catasetum tridentatum, that is to say, destitute of the crested appendages, and perfectly galeate and naked." Lindley not only failed to see the significance of the phenomenon, but afterwards (in 1837) stated that he could not believe his own words. The plant had been sent from Bahia in 1823 by G. Don, and flowered at Chiswick in August, 1824.

The year 1827 was marked by still more notable additions. In the *Botanical Register* the first species of Sephronitis was figured, the name being written Sopronia, until it was discovered that the latter had already been used. Sophronia cernua (t. 1129) is said to have been "found upon a tree at Botofogo, three miles from Rio de Janeiro, by William Harrison, Esq., by whom it was transmitted to Mrs. Arnold Harrison, of Aigburth, near Liverpool, whence it was obligingly sent with a sketch, in December, 1826." Oncidium divaricatum (t. 1050) was sent to the Horticultural Society by A. J. Hatherly, Esq., Vice-Consul at Rio, and bloomed at Chiswick in October, 1826. Speaking of Brazilian Orchids, Lindley remarked that "almost every epiphyte proves, upon its first appearance in our gardens, to be new to science."

In the third volume of Hooker's *Exotic Flora* (dated 1827) we find:—Gongora atropurpurea (t. 178), sent from Trinidad by Baron de Schack, and flowered at the Liverpool Botanic Garden in June, 1825; Dendrobium calceolaria (t. 184), also "communicated from the rich collection of Orchideous plants at Liverpool by Messrs. Shepherds, having been sent from the East Indies by Dr. Carey in 1820"; Epidendrum ellipticum

(t. 207), "received from Rio, through Captain Graham, in 1824, and flowered in the stove of the Edinburgh Botanic Garden in March, 1826"; Catasetum semiapertum (t. 213), "sent by Bell Edward Lloyd, Esq., from Brazil, to Miss P. S. Faulkner, of Fairfield, who presented them to the Liverpool Botanic Garden," where they flowered in the stove in May, 1826; Maxillaria parvula (t. 217), communicated from the collection of Mrs. Arnold Harrison, whose brother sent it from the Organ Mountains in Brazil; and M. aromatica (t. 219), procured by Lord Napier from Mexico, and communicated to the Botanic Garden at Edinburgh, where they bloomed in May, 1826. The two latter are now referred to Bifrenaria and Lycaste respectively. The collection at the Liverpool Botanic Garden was evidently very successfully managed at this period, for we also find a handsome plate of Cattleya Loddigesii (t. 186), with the remark that the species "was introduced for the first time into Great Britain at the Botanic Garden at Liverpool, from the neighbourhood of St. Paul's, Brazil, by Mr. Woodforde, as long ago as the year 1810. It blossomed there in 1811, and has done so every year since, and from it, Mr. Shepherd believes, have originated all the individuals that exist in other collections." Brassia caudata (t. 179) is also mentioned as a "superb specimen" from the same collection.

In 1827 Dr. W. J. Hooker, then Professor of Botany at Glasgow, became Editor of the *Botanical Magazine*, and the volume for this year contains plates of no less than thirteen Orchids, eight of which were novelties, and two of them new genera. The latter were Zygopetalon Mackaii (t. 2748), described as a plant of great beauty, introduced from Brazil, and flowered with Mr. Mackay, of the Dublin College Botanic Garden, in February, 1827; and Lockhartia elegans (t. 2715), which was sent from Trinidad by Mr. David Lockhart, and flowered at Kew. The others were:—Oncidium pulchellum (t. 2773), sent from Demerara by C. S. Parker, Esq., and flowered at the Liverpool Botanic Garden in June, 1827; Maxillaria Parkeri (t. 2729), with the same history as the preceding; M. racemosa (t. 2789), received from Rio de Janeiro, and flowered in the "rich collection" of Richard Harrison, Esq., of Aigburth, near Liverpool (now referred to Bifrenaria); Pleurothallis foliosa (t. 2746), received from Brazil, and flowered at the Dublin College Botanic Garden in February, 1827 (now referred to Gomeza); Bletia Woodfordii (t. 2719), which flowered at Kew, and afterwards proved identical with Phaius maculatus, so that the record, "communicated, in 1820, from Trinidad," is probably erroneous; and Gongora speciosa (t. 2755), which afterwards became the type of the genus Coryanthes. Its history is given in the following interesting note:—"There are two collections in this country that are pre-eminently rich in the plants of Brazil, that of Mrs. Arnold Harrison, and of Richard Harrison, Esq., both of

Aigburth, near Liverpool. Their connection with Rio de Janeiro, and the circumstance of their having a relative resident there, who loses no opportunity of collecting the vegetable treasures of that country for them, have been the means of their introducing to Britain some of the choicest productions now existing in their stoves. Some are already recorded in the pages of this and other botanical works, especially individuals of the family of the parasitic Orchideæ; and amongst the most curious of that very singular tribe will, undoubtedly, rank the subject of our present plate. It grows on trees in large patches, on Victoria Hill, above Bahia, in Brazil, and was sent by Henry Harrison, Esq., of Rio, to Richard Harrison, Esq., about twelve months ago. It produced its large and fragrant blossoms in the month of May, 1827. The cup at the base of the labellum of the present plant Mr. Harrison's gardener observed to be rapidly filled with the honey; and Mr. Shepherd informs me that some cups that were emptied in the morning were, when he saw the plant on the same day again, half filled with the nectariferous juice." The "nectariferous juice" was apparently not tasted, for it is now known not to be "honey," and to have a very different use.

The volume of the *Botanical Register* for 1828 opened with a plate of Renanthera coccinea (t. 1131), which had flowered in the collection of H. R. H. Prince Leopold, at Claremont, in October, 1827. Lindley wrote:—"The work of the missionary Loureiro, published in 1790, a drawing in the possession of the Horticultural Society of London, and the reports of some travellers who have visited China, have been, up to the present time, the only evidence to Europeans of the existence of this truly magnificent plant, the beauty of whose blossoms surpasses everything known in the vegetable world. That the Chinese suspend in baskets from the ceilings of their rooms several of the tribe of plants to which this belongs, some for the sake of their flowers, and some on account of their delightful fragrance, is familiar to everyone. Many, if not all, of this description, have been introduced from time to time; and a few have flowered with us. Among those which bid defiance to the skill of the cultivator has long been recognized a species, introduced some time previous to 1817, with long, leafy stems sometimes attaining the height of eight or ten feet, and fleshy, veinless leaves. It is frequently imported from China, and is now to be found in almost every collection of which parasitical Orchideæ form a part, attaching itself by means of its long tortuous roots to a damp wall, columns, or other bodies placed as its support. This is Renanthera coccinea." The method of treatment followed was explained by the gardener, Mr. Thomas Fairburn, in a paper entitled, "On the cultivation of Air Plants in Stoves," which was sent to the Horticultural Society and published in their *Transactions* (vol. vii., p. 499.):—"First, some old rotten roots of fern and moss were collected and put into the

bottom of a china jar in which the plant was placed; it was then covered nearly over with the same materials, and as roots were made they were covered with more moss; it was then suspended over the flue where the fire comes into the house, and a large waterpot with a syringe was always ready to give the plant a plentiful supply of water at every opportunity, by which means that part of the house was always kept moist . . . . My success has been such with the above treatment as to produce six spikes of flower on a single plant." The plant in question had been brought from China in 1824 by Captain Mitchell.

In the same volume of the *Transactions of the Horticultural Society* may be found a paper (p. 203) entitled, "An Account of a Plan of Heating Stoves by means of Hot Water, employed in the Garden of Anthony Bacon, Esq., F.H.S.," by Mr. William Whale, gardener to Mr. Bacon, in which the writer remarks that after twenty years of experience in forcing, both with brick-flues and steam, he certainly gives preference to the method which Mr. Bacon has adopted of heating his houses with hot water. The system was first put in practice on a small scale by Mr. Bacon at his seat at Aberamen, in Glamorganshire, in the year 1822. The new system was not invented for the purpose of Orchid growing, but it deserves to be mentioned here, for it gradually effected a complete revolution in plant-growing under glass, and contributed in no small degree to the improvement in Orchid culture which subsequently followed.

(To be continued.)

TREVORIA CHLORIS.

THIS very interesting Orchid has now flowered in the collection at Burford, under the care of Mr. White. It was described and figured as a new genus in May, 1897, by Mr. F. C. Lehmann (*Gard. Chron.*, 1897, xxi., p. 345, Suppl., fig. 128), as follows:—" My first acquaintance with Trevoria occurred in 1887. Only three specimens were seen, bearing thin, drooping spikes, about 40 cm. long, of thickly set seed-vessels, but no flowers. The plants I tried to take to the Cauca for cultivation, but alas! they were stolen from me by some rascal at Esmeraldas during my absence from the steamer, together with a number of other botanical treasures. Nothing more was seen or heard of this plant, which by-the-by looked quite novel and interesting, until last year, when during an exploration of a certain portion of the Western Andes of Colombia, with a view to projecting a map on behalf of the Cauca Government, a few plants of this species of Orchid were observed. The species found in Colombia is, however, quite distinct from that of Ecuador. The latter grows at an elevation of 500

metres above the sea, and produces flower-spikes of from twenty to thirty flowers, the size and character being as yet unknown, while the Colombian one inhabits a region from 1500 to 1700 metres above the sea (as far as observed), and bears racemes of only three to five—commonly, only three flowers.

"As a genus, Trevoria is very characteristic and distinct. Its nearest neighbours are Coryanthes, Schlimia, Stanhopea, and Gorgoglossum, but it is distinguishable at first sight from either of them. Trevoria chloris produces large, fleshy, wholly green flowers, placed on the drooping spike in the manner of the buckets of a dredger chain. The narrow disc of the lip and the thick, coriaceous process at its base are the only different coloured organs in the flower; they are pure white. Both from a morphological, as also from a physiological, point of view this genus is very novel and interesting. The position of the column and lip, standing straight upright in an urceolate manner, the thick, fleshy process at the base of the lip being of exactly the same length as the column, and standing parallel and closely adpressed to that organ, the peculiar shape and insertion of the stigma, and several other items, are wholly novel, and the arrangement of them to each other may set at nought some of the pet views of modern hypercritical speculators with respect to the aid of insects in the fertilisation of Orchids, or give rise to quite new conceptions.

"I have named this genus of Orchidaceæ in honour and commemoration of Sir Trevor Lawrence, one of the most enthusiastic Orchidists that ever lived. Trevoria has to answer our purpose; Lawrencea and Lawrencella being already in existence in Compositæ and Malvaceæ respectively. May Sir Trevor's love of Orchids *perdure sempervirent* as Chloris, the goddess of flowers."

A comparison with Mr. Lehmann's drawing shows several marked differences. The petals are much broader and less attenuated, while the front lobe of the lip is ovate-elliptical rather than linear, but whether this is due to variation or to some other cause is not yet apparent. The saccate base of the lip and the large crest tightly appressed to the column are remarkable, but there is nothing in the flower to suggest new views about the aid of insects in fertilisation, a matter about which we know surprisingly little in connection with Andine Orchids, and it would be interesting if Mr. Lehmann would utilize some of his opportunities by observations in this direction. Whether the Ecuador plant belongs to the same genus perhaps remains to be proved, considering that the flowers are not yet known, and it is to be hoped that more plants of it will soon be obtained. The discovery of such a striking species as the one under notice is a sure indication that our knowledge of Andine Orchids is still far from complete.

R. A. R.

PHRAGMIPEDILUM SARGENTIANUM.

PHRAGMIPEDILUM SARGENTIANUM is an interesting Brazilian species which was introduced from Pernambuco by Messrs. F. Sander & Co., and flowered for the first time in 1893, when it was described in these pages under the name of Selenipedium Sargentianum (vol. i., p. 239), being dedicated to Prof. Sargent, director of the Arboretum of Havard University. Our illustration is reproduced from a photograph kindly sent by Oakes Ames, Esq., of North Easton, Mass., U.S.A., and shows its general characters very clearly. It is most allied to P. Lindleyanum, a native of

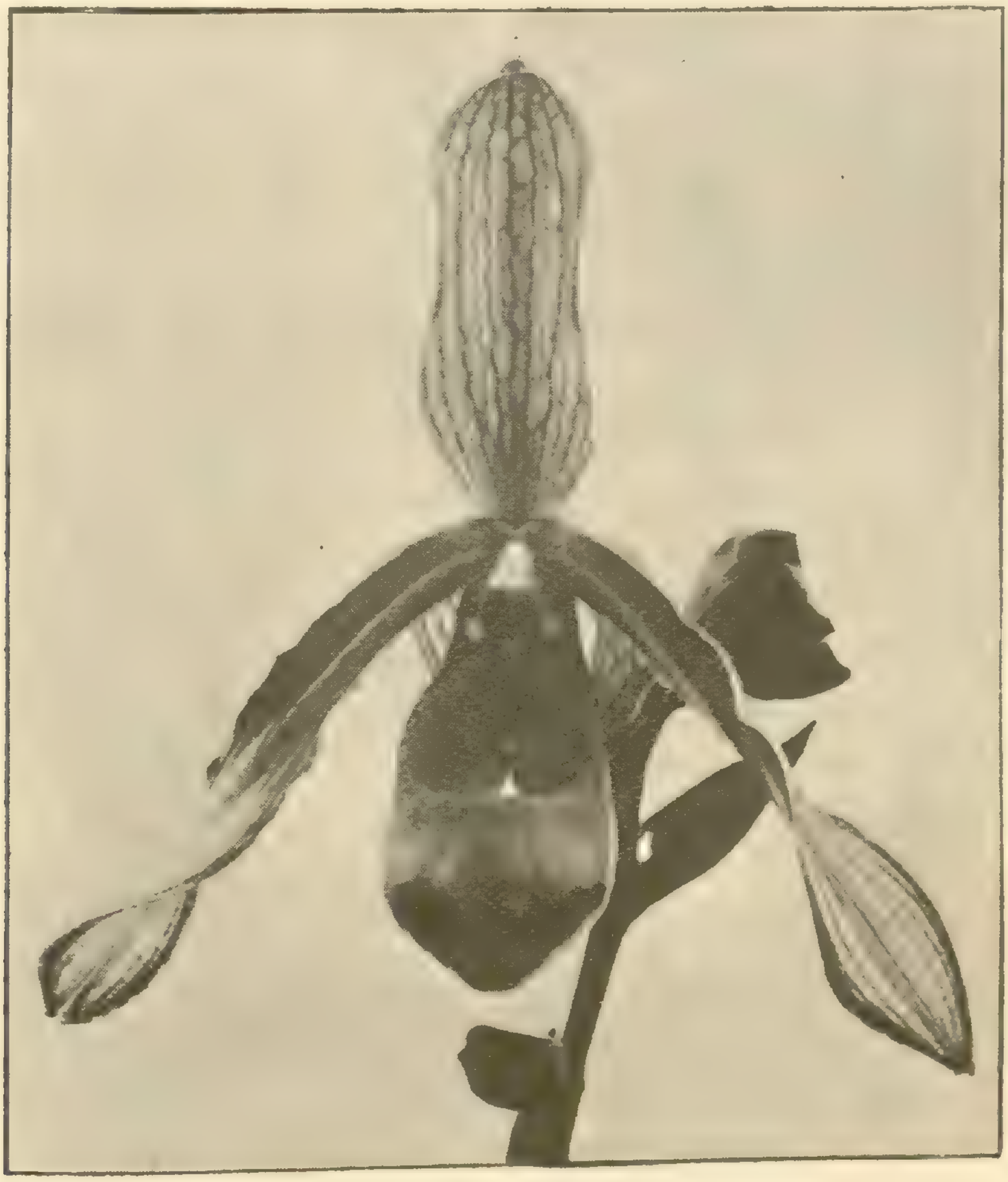

FIG. 47. PHRAGMIPEDILUM SARGENTIANUM.

Mount Roraima, but among other characters may be distinguished by a pair of small, white tubercles on the side lobes of the lip. The general ground colour is light greyish green, suffused with light pink on the upper sepal, veined with purplish red at the apex and along the margins of the petals, and marbled with light brown on the side lobes of the lip. It is not very common in cultivation, and we have not yet heard of any hybrids from it, though seedlings may be in existence which have not yet reached the flowering stage.

ORCHID GROWING AS A HOBBY.

(*Continued from page* 296.)

EARLY in the following spring I called on my friend the Doctor again, and found unmistakable signs of progress. More of the plants were becoming established, and growths were pushing in all directions. Several spring-flowering Dendrobiums and other plants were in bloom, and gave bright patches of colour to the Warm house in which they were, and the other departments promised a good display in the course of a few weeks. The plants were being well looked after, and insect life evidently found a difficulty in establishing itself under the Doctor's vigilant eye. Some of the older plants had been re-potted or top-dressed, just as the young roots were beginning to push out, and were now finding their way into the new compost. I think it was on this occasion that I saw a nice spike of Odontoglossum × Andersonianum, which had flowered among a batch of O. crispum—one of the surprises which one continually meets with among imported Odontoglossums—and there were also two or three examples of the fragrant O. gloriosum out of the same batch.

I made two or three other visits that season, and on each occasion found many objects of interest in the collection. Towards the end of the year I noticed two or three young seed pods among the Cypripediums, each bearing a small ticket, indicating that hybridizing operations had commenced. These, I discovered, were objects of special interest, and we speculated upon the chances of their containing good seed, the possibility of germinating it, and how long the seedlings would be before they flowered. The question what they would be like was not in doubt, for the same crosses had already flowered in other collections; but this added to the interest of the experiment rather than not, for it showed that success was at least possible. Later on these pods ripened, and some of the seeds appeared quite plump when examined under a lens, and they were accordingly sown on the compost of some established plants. They were now watched with renewed interest, and how many times the lens was called into requisition it would be difficult to say. A good many of the seeds ultimately disappeared, but some gradually assumed a green colour and lost the finely reticulated testa, afterwards developing into tiny green globules about the size of a large pin's head, and at length the first tiny leaf appeared and a young root began to push out. Now came the work of pricking off the young seedlings into tiny thimble pots, and a delicate business it was, but at length it was successfully accomplished, and the result was surveyed with a considerable amount of satisfaction. They gradually progressed, and became thriving little plants, requiring only ordinary attention and successive shifts into larger pots as additional room was

required. Ultimately a scape was produced, and the first flower unfolded its petals—just an ordinary Harrisianum, not one whit better than might have been obtained at any of the nurseries, but how vastly more interesting to the raiser who has tended it and watched its progress with so much solicitude !

Hybridising and raising seedlings is very interesting work. There is now quite a large batch of seedlings in various stages, some of them in pots of almost microscopic dimensions, some of them "bedded out" by the dozen or so in baskets of moss, which are suspended from the rafters of the house so as to get the best light possible, and others standing in rows on the stages, each one on an inverted flower-pot, with here and there healthy little succulent roots growing over the edges, and looking pictures of health. On some of the Cattleyas hang great fat capsules, apparently containing seeds enough to fill the whole house, though in the end it is rare to find too many plants in any batch of seedlings. Cypripediums and Dendrobiums also carry promising seed-pods, each with its little ticket giving the records, and a few withered flowers here and there, similarly labelled, tell their own tale. Occasionally I look in and give the Doctor a hand with some of his operations, and on a future occasion may be able to go into a few more details on the subject.

A. O.

(To be continued.)

DISEASES OF ORCHIDS.

CÆOMA ORCHIDIS.

We have received from the collection of R. Menzies, Esq., Viewfield, Whitburn, N.B., some leaves of Epidendrum vitellinum which bear on the under surface a fungus, consisting of a number of minute, orange-coloured globules, forming in the aggregate rust-like patches, and discolouring and ultimately destroying the tissue on which it grows. Mr. Menzies remarks that he has shown it to several growers, none of whom have seen it before, and that in his own collection it has only been observed on this particular species of Orchid. It is a fungus known as Cæoma orchidis, a member of the Uredo group, and is a native of Europe, including Britain, and occurs wild on Orchis maculata, O. latifolia, O. militaris, O. sambucina, Gymnadenia conopsea, Listera ovata, and probably on other Orchids. Of late years it has been observed in collections on Phaius, Satyrium, Cattleya, and probably others. Its life history and distribution are imperfectly known at present, but it seems probable that, like many others, it goes through an alternating phase of existence on some other plant, as in the case of the wheat rust, Puccinia graminis, which goes through what is

known as its Æcidium stage on the common Barberry. This latter stage was formerly considered to be a separate fungus, under the name of Æcidium berberidis. Plowright observes respecting Cæoma orchidis:—"In view of so many statements having been made that the Cæomata are the æcidiospores of the Melampsoræ, I have made several cultures with the teleutospores of the Melampsoræ. I have made several cultures with the teleutospores of Melampsora betulinæ on Orchis mascula and O. latifolia, but always without result. I was led to do so from finding C. orchidis under a birch tree affected with the Melampsora, but I feel sure there is no connection between the two fungi." As to remedial measures, the patches should be lightly brushed over with a little soft soap and water in which a few grains of permanganate of potash have been dissolved. Condy's fluid, which is the latter dissolved in water, of course answers the same purpose.

ORCHIDS IN SEASON.

AUTUMN-FLOWERING Orchids are now coming in in full force. The beautiful Cattleya labiata, whose re-discovery a few years ago was the cause of so much excitement, is now making a brave show, and one wonders whatever we should do without it at this season. Dendrobium Phalænopsis was another most fortunate discovery, for the Warm house has been gay with its beautiful racemes for some weeks, and the plants show an amount of variation in colour which is remarkable. It is a host in itself. Several pretty forms of it are sent by Mr. C. C. Hurst, of Hinckley. Lælia Perrinii deserves to be mentioned, but is now surpassed by some of its hybrids, which are also for the most part autumn-bloomers, and now contribute their quota to the display. The good old Cattleya Loddigesii is also blooming well, with C. Bowringiana, and several hybrids of the latter, whose flowers are for the most part improved in size and less numerous, as compared with this parent. C. Dowiana and its hybrids must not be passed over, while that brilliant little gem, Sophronitis grandiflora, is commencing to bloom, and will continue for a long period. Some of its hybrids are also very beautiful, though at present less common than could be wished.

The Paphiopedilum group furnishes some valuable autumn- and winter-blooming kinds, which are also very useful for cutting, as they last so long in water. The good old P. insigne and its numerous modern varieties form a most useful group, while P. Spicerianum is also nicely in flower, and the fine hybrid between them, P. × Leeanum is following on rapidly. This hybrid is becoming almost as variable as P. insigne itself, and is probably the best of the older ones. P. × Arthurianum comes in at the same time,

and the P. Fairrieanum influence has introduced striking modifications in the P. insigne character which it still largely retains. P. × œnanthum superbum is one of the oldest and best of the coloured forms, but some of the more recent ones are likely to be appreciated when better known. It would be easy to draw up quite a long list of hybrids which flower at this season, and a good many of them owe this character more or less to the influence of the species just mentioned. The hybrids of P. Charlesworthii, which are beginning to come, seem also to retain largely the autumn-blooming character, and those that retain the bright colour of the dorsal sepal of this species will be highly prized.

CALENDAR OF OPERATIONS FOR OCTOBER.

By H. A. BURBERRY, Orchid Specialist, King's Heath, Birmingham.

THE temperatures given for last month are likewise suitable for the present, although, of course, a little allowance may be made as we enter into the depth of winter. The lowest degree however that I can safely recommend will be 5° lower all round than those given in the last Calendar.

See that all Orchids that are inactive enjoy a real good rest, but at the same time do not let that rest take the form of absolute starvation, which is sometimes the result. In other words do not bake up the roots of an Orchid too severely, so that it causes the pseudobulbs to shrivel, and the plant to present a distressful appearance, or much and oftimes irretrievable damage is done; also see that the atmosphere in the resting house contains a reasonable amount of moisture, either by the admission of the moist air from outside or by the distribution of water within. The first named method is doubtless preferable.

Careful stoking of the fires must now be the order of the day, for it is no exaggeration to say that success for the next four or five months rests chiefly upon this one thing. The fire should now scarcely ever be quite extinquished, but that is no reason why the pipes should be hot when lukewarmness would suffice. Remember that the hot pipes rob the atmosphere of its life-giving and growing qualities, therefore, while always having enough to maintain the desired temperature, carefully guard against excess.

Select a fine, bright morning for a general watering of the plants, and make the best use of the same by giving some to all those that can take it with safety. But when the sky is overcast, and the weather cold, let the watering at the roots be of an exceptional nature. When watering resting plants during winter it is not good practice to thoroughly soak the compost by immersion, because it remains wet too long. It is better to water with the water-can, as enough soaks in for the plants' requirements.

Very little damping down, other than that which watering supplies, will now be required in any department; during dull, moist weather I can safely say none, but during hard, frosty weather once or twice according to circumstances. I am speaking now of the country air, but do not forget that in large centres smoky fogs have to be fought. During the time these are dense let all departments—no matter whether the plants are resting or not—be well charged with moisture, and the roots watered if very dry. If this is followed, at the same time closing all ventilators tightly and stopping up what other air spaces there may be, the damage from fog is greatly reduced.

Now that severe weather in the way of frosts may be expected, I may again mention that the system of covering the glass at night is an exceedingly beneficial one, as less fire is required, resulting in a purer and better growing atmosphere. I heartily recommend a trial in all departments alike of this system of protection from cold. Old mats, sacks, carpets, anything, even the summer shade blinds, are better than nothing, but these are ruined by exposure to the weather, and again, when frozen, are difficult to roll up and down, whereas the aforementioned things may be put on and off at will.

Potting operations are now, generally speaking, better deferred until spring. That repotting may take place throughout the winter in some favoured localities I do not dispute, but such are exceptional cases. To re-pot an Orchid now means trouble, because the new root growth is so slow, rendering re-establishment long and uncertain. The quicker the roots can claim the new compost, the better for the plant; therefore no plant should be repotted which has to have its roots thoroughly overhauled, and to do such work well this is mostly necessary.

A little repotting under certain conditions may however be proceeded with. There are sure to be a few plants in every collection which have, through some reason or another, gone back; and which require special treatment to restore them to health. These, if in large pots, having but few if any roots alive, should be shaken clean out and reduced to very small ones. Pots just sufficiently large to admit the plant being squeezed in should be selected, a little fresh sphagum moss being placed round the roots, or where the roots should be. Such plants should not receive the ordinary rest accorded to strong ones at this season, but be more liberally treated to warmth and moisture, thus promoting root action, plumpness of the pseudobulb, and colour to the foliage. Again, such plants that have turned the corner and are moving on in the right direction may be re-potted just when they may seem to desire it, no matter whether winter or summer, because all they require is to be potted on into larger pots, which can easily be done without disturbing the ball of roots in the least. Again, newly

imported plants may and should be temporarily potted up as received, rather than allow them to lie about on the stages too long. They should likewise be placed in small pots supported with a bit of moss, re-potting them permanently when furnished with a few roots, and not before.

Collect, after blooming, those Brazilian species of Oncidium, such as O. crispum, O. varicosum, and other similar cool growing kinds, and let them be suspended so that there may be no doubt about their receiving a perfect rest, which is absolutely essential for most of them. Apparently they are, from a growing point of view, as easy as weeds when first imported, and any-one not knowing them is frequently deceived, and does not trouble much about the winter's rest, until they become greatly reduced, and then it is too late, because when once allowed to get run down they are fearfully slow to recover. These Brazilian Oncidiums, however. can be kept in a thriving condition if a system of hardy culture be followed, but they are often ruined through over-kindness, that is to say by shading them too densely during the summer. It should be borne in mind that what is suitable for Odontoglossum crispum in this respect scarcely answers for these kinds of Oncidium. Although cool growing, yet they require more sun, and a better place might be found for them with the Mexican Lælias. By the way these Lælias, particularly L. autumnalis, L. furfuracea and albida, will now be making a good show of bloom, after which water at the root should be gradually reduced.

THE AMATEUR'S ORCHID HOUSE.

Should there be any hot-growing kinds in his possession, such as Phalænopsis amabilis, P. Schilleriana, Dendrobium Phalænopsis, D. formosum, Oncidium Papilio, O. Kramerianum, O. ampliatum, Miltonia Roezlii, Diacrium bicornutum, or any other species known to prefer warmth, a situation nearest the boiler might be selected for them with advantage. The Cypripediums will now begin to come in, and will brighten up the house during the winter months. A large number of these bloom during the dull season, and, being of such easy culture, are invaluable kinds for the amateur to grow. They should occupy the stage at the moistest part of the house, reserving the roof for such of the Dendrobiums as can conveniently be suspended. On bright days Cypripediums, Odontoglossums, &c., may still continue to be syringed when watering them. But on this point much will depend on the structure, the aspect, the stage, &c., and the advisability of syringing or otherwise must be left to one's own discretion. Still, I may say that much benefit will result from the shower-bath being continued throughout the winter, if the house is not a particularly damp, cold, or ill-ventilated one.

When the open stage is in use, having nothing else between the plants and the pipes beneath—and such I have frequently advised—I would

suggest that something, such as a sheet of brown paper, be laid along the stage immediately above the hot pipes during the winter, thus more equally distributing the heated air, and preventing it from ascending immediately and continually among those plants at the nearest point, causing th:m to become too dry in comparison with the others, and also preventing the water, when syringing or watering, dropping on to the perhaps heated pipes aud causing too much steam. There is now practically but little, if any, difference between the requirements of the Cool house and Intermediate house Orchids. All will delight to grow in the same temperature, which should generally range between 50° to 60°, a little higher or lower at times, according to the weather. Of course one has to select positions which may be calculated, according to one's experience, to best grow the various species; and to note and fathom the peculiarities of Orchids in this respect is one of the pleasures of Orchid growing, and is the only sure way to succeed.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

A MEETING of the Manchester and North of England Orchid Society was held at the Coal Exchange, Manchester, on October 12th, when some choice exhibits were staged. The Committee was represented by—G. Shorland Ball, Esq., in the chair, and Messrs. Law-Schofield, R. Ashworth, Duckworth, Cypher, Robson, Stevens, and Weathers (Hon. Sec.), and the Awards granted comprised five First-Class Certificates, four Awards of Merit, and one Cultural Certificate.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), showed a magnificent form of Vanda Sanderiana (F. C.), an exceedingly fine form of Cattleya × Mantinii nobilior (F. C.), Odontoglossum × Andersonianium oculatum, O. crispum, Cypripedium insigne Emily Leemann, in the way of Dorothy (A. M.), and Lælio-cattleya × intermedio-flava. This exhibitor also staged a very good group, amongst which were the above and many other very fine things, and for which he was awarded a Silver-gilt Medal.

W. Thompson, Esq., Stone (gr. Mr. Stevens), showed Oncidium incurvum album and Odontoglossum tripudians, both of which received Awards of Merit. A small but interesting group was also staged, in which we noticed several good Odontoglossums, and for which a Vote of Thanks was awarded.

Dr. Hodgkinson, Wilmslow (gr. Mr. Woore), showed a very fine form of Sophronitis grandiflora rosea (A. M.).

H. Partington, Esq., Glossop (gr. Mr. Campbell), showed three well-flowered plants of Lælia præstans (Cult. Certificate).

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), showed a fine plant of Cypripedium triumphans (F. C.), C. × memoria Moensii (F. C.), and C. Charlesworthii pallidum.

Mr. James Cypher, Cheltenham, showed the beautiful white Dendrobium Phalænopsis hololeucum, to which a First-class Certificate was given.

At the meeting held on October 25th, there was a very fine display, and the members of the committee present were :—Messrs. G. Shorland Ball (in the chair), Ashworth, Worthington, Thompson, Warburton, Cypher, Robson, Stevens, and Weathers (Hon. Sec.).

John Leemann, Esq., Heaton Mersey (gr. Mr. Edge), staged a very effective group, for which a Silver-gilt Medal was awarded, and amongst which we noticed Cypripedium Lawrenceanum × concolor, C. × Milo, C. × Lucienianum, C. × Ballianum, Cattleya × Mrs. J. W. Whiteley, C. × Hardyana, with a very well coloured lip but small flower (A. M.), C. × Mantinii nobilior (Cult. Cert.), and Lælio-cattleya × Henry Greenwood, Leemann's variety (A. M.).

W. Thompson, Esq., Stone (gr. Mr. Stevens), showed a very fine plant of Odontoglossum crispum Jubilee (Cult. Cert.), and some well flowered plants of Epidendrum vitellinum. The same exhibitor also staged a pretty group of miscellaneous Orchids, for which he received a Silver Medal.

Richard Ashworth, Esq., Newchurch (gr. Mr. Pidsley), showed a very fine Odontoglossum crispum Oliver Ashworth, with flower of good form and substance, and well covered with spots of dark maroon (F. C.).

Harry Worthington, Esq., Whalley Range (gr. Mr. Went), showed a fine plant of Cypripedium callosum Sanderæ, which received a First-class Certificate.

A. Warburton, Esq., Haslingdon (gr. Mr. Lofthouse), showed Cypripedium × I'Ansoni (F. C.), and C. × Olivia (F. C.).

Thomas Baxter, Esq., Morecambe (gr. Mr. Roberts), showed Odontoglossum crispum Ruby (A.M.), and O. nebulosum album (F. C.), and staged a good miscellaneous group, for which a Silver Medal was awarded.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), showed Dendrobium Phalænopsis hololeucum, which gained a First-class Certificate.

F. W. Tattersall, Esq., Morecombe (gr. Mr. Grant), showed Cypripedium insigne Ernestii, C. × Arthurianum, C. tonsum, a hybrid Lælio-cattleya (cinnabarina × intermedia), and a fine plant of Odontoglossum grande. This exhibition was awarded a Silver Medal for an interesting group.

Messrs. James Backhouse and Son, York, showed Cattleya × Goossensiana and Lælio-cattleya × Antigone.

W. Duckworth, Esq., Flixton (gr. Mr. Tindall), staged an effective group, in which plants of Cattleya Dowiana aurea were conspicuous, for which he received a Silver Medal.

Messrs. Cypher and Son, Cheltenham, were awarded a Silver Medal for an interesting miscellaneous group.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

A MEETING of the Royal Horticultural Society was held at the Drill Hall, Buckingham Gate, Westminster, on October 9th, when some very interesting and beautiful Orchids were exhibited, though only one Award of Merit and two Botanical Certificates were granted. The members of the Orchid Committee present were:—H. J. Veitch, Esq., in the Chair, and Messrs. H. J. Chapman, W. Cobb, De B. Crawshay, J. Douglas, J. G. Fowler, E. Hill, H. Little, H. M. Pollett, T. Rochford, A. H. Smee, H. A. Tracy, W. H. White, C. Winn, W. H. Young, and J. O'Brien (Hon. Secretary).

The Right Hon. J. Chamberlain, M.P., Highbury, Birmingham (gr. Mr. Smith), staged a handsome group of Orchids, including a finely-flowered example of Cattleya Bowringiana, a good typical C. × Mantinii, C. × M. superba, a large and richly coloured variety, C. × Bowringiano-velutina var. Hilda, with rose-purple sepals and petals, and a lip most resembling C. velutina in shape and colour, C. × Minucia, the handsome Lælio-cattleya × Duke of York (L.-c. × elegans × C. Brymeriana), with light-rose-coloured sepals and petals, and a carmine-crimson lip, and the handsome Dendrobium Phalænopsis Chamberlain's variety.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a fine spike of Vanda Sanderiana, Masdevallia × Ajax superba, the graceful Angræcum citratum with three racemes, a good example of Maxillaria striata, spikes of Epidendrum sceptrum, and Cirrhopetalum guttulatum, the latter receiving a Botanical Certificate.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent the handsome Lælio-cattleya × Ingrami, and Cattleya labiata The Puritan, a fine white with a pink tinge on the front of the lip.

The Hon. Walter Rothschild, M.P., Tring Park (gr. Mr. Hill), sent Cattleya × Maroni Tring Park var., a handsome form with flowers six inches across, in which the characters of C. Dowiana and C. velutina are well combined.

Captain Holford, Westonbirt, Tetbury (gr. Mr. Chapman), sent some fine flowers of Dendrobium formosum giganteum, two fine light-coloured Dendrobium Phalænopsis, and some hybrid Cypripediums.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), showed Cattleya Dowiana aurea and C. D. superba, the latter a large and richly-coloured form; also a fine spike of Cattleya Bowringiana.

W. E. Brymer, Esq., M.P., Ilsington House, Dorchester, sent flowers of a hybrid raised between Cattleya Mendelii and Lælio-cattleya × elegans, having pale lilac sepals and petals, and the lip with a purple front lobe and some yellow in the throat.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent a form of Gongora nigrita, which received a Botanical Certificate. The flowers were cream-white, with red-brown markings.

Messrs. Hugh Low and Co., Bush Hill Park, Enfield, sent Cattleya Loddigesii gigantea, C. Bowringiana Low's var., a large and richly-coloured flower, Lælio-cattleya × Aurora, Lælia pumila Bush Hill var., a pretty white form with a tinge of pink on the lip.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, showed Cattleya × Chloe (Bowringiana × bicolor) a pretty hybrid, having bright purple flowers and the front lobe of the lip dark velvety purple.

At the meeting held on October 23rd, there was a finer display of Orchids. The committee was represented by :—H. J. Veitch, Esq., in the chair, and Messrs. H. Ballantine, T. W. Bond, H. J. Chapman, W. Cobb, J. Colman, De B. Crawshay, J. Douglas, J. G. Fowler, J. T. Gabriel, E. Hill, H. Little, H. M. Pollett, J. W. Potter, T. Rochford, H. A. Tracy, W. H. Young, and J. O'Brien (Hon. Sec.).

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), staged a very fine group, to which a Silver Flora Medal was given. It contained some good forms of Cattleya labiata, Dendrobium Phalænopsis and Lælia pumila, together with Cattleya × Maroni, C. Bowringiana, C. Warscewiczii, Stenoglottis longifolia, Lælio-cattleya × Henry Greenwood, Cypripedium × Muriel Hollington, C. × Helen (Dayanum × Charlesworthii), C. × Wiganianum, C. × Allanianum, C. × Pollettianum, Dendrobium formosum giganteum, and D. bigibbum. A Botanical Certificate was given to D. Moorei, a dwarf species from Lord Howe's Island with white flowers, and an Award of Merit to D. × Leeanum atropurpureum.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), received a Silver Banksian Medal for a fine group of Cypripediums, which included C. × Regina, C. × Niobe, C. × H. Ballantine, C. × Arthurianum, C. × Mrs. F. L. Ames (all five Farrieanum hybrids), C. insigne Sanderæ (home raised), C. × mixta, and others. An Award of Merit was given to C. × Vidor (C. × Chas. Canham × Leeanum superbum), a handsome form in which the dorsal sepal is deep chocolate purple with a white margin.

C. H. Feiling, Esq., Southgate House, Southgate, (gr. Mr. Stocking) showed a pretty hybrid Cattleya, apparently a form of C. × massiliensis.

W. M. Appleton, Esq., Tyn-y-coed, Weston-super-mare, showed Dendrobium Phalænopsis Brilliancy, a brilliant carmine-rose variety, Cypripedium × Lady Roberts (Harrisianum superbum × niveum) having finely-shaped white flowers tinged with rose-purple, and two forms of C. × Sir Redvers Buller.

D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, sent cut spikes of Oncidium Forbesii, Odontoglossum crispum, and Cypripedium Charlesworthii.

M. Jules Hye-Leysen, Ghent (gr. M. Coen), sent a flower of the charming albino, Cypripedium × Maudiæ.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent Cattleya Dowiana aurea, two good C. Bowringiana, and Lælio-cattleya × Tiresias (C. Bowringiana × L.-c. × elegans Turneri). The latter is a fine Veitchian hybrid certificated in 1896, and the Committee decided to have a drawing made for the collection.

Sir Jas. Miller, Manderston, Duns, N.B. (gr. Mr. Hamilton), sent cut spikes of two forms of a pretty hybrid derived from Cattleya bicolor and Lælia Dayana, also one raised from C. maxima × Gaskelliana.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), sent a fine inflorescence of Lælia Perrinii.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a small but choice group, containing three good examples of Cattleya × John Baguley (Hardyana × Bowringiana), a fine hybrid most resembling C. × Mantinii in general character, two fine examples of Aërides Lawrenceæ, and Sophrolælia × Eros (Lælio-cattleya × elegans Turneri × Sophronitis grandiflora), the latter a most brilliant hybrid, with crimson-scarlet flowers with some yellow on the disc, to which a First-class Certificate was given.

Messrs. Hugh Low & Co., Bush Hill Park, staged a pretty group, containing some good examples of Cattleya labiata, C. × Portia, Lælia pumila, Lælio-cattleya × exoniensis, Oncidium varicosum, O. Forbesii, Catasetum callosum, &c., with a splendid example of Cattleya bicolor in the centre, bearing five spikes. A Silver Banksian Medal was awarded.

Messrs. James Veitch & Sons, Chelsea, staged a splendid specimen of Cattleya Bowringiana, bearing three spikes, with twenty, twenty-seven, and thirty-three flowers respectively. A Cultural Commendation was awarded.

Mr. T. Rochford, Broxbourne, received an Award of Merit for Odontoglossum crispum Maud Rochford, an elegant variety, having the markings mostly arranged on the lower halves of the segments.

Messrs. Heath & Son, Cheltenham, sent fine examples of Vanda cœrulea and Dendrobium formosum giganteum.

Messrs. F. Sander & Co., St. Albans, staged a small group containing some good hybrid Cypripediums with examples of Cattleya Loddigesii.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, Buckingham Gate, Westminster, during November, on the 6th and 20th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The subject of the Lecture, at 3 o'clock on the former date, is "Insecticides, Spraying for Fungi, &c.," by Mr. R. Newstead, F.E.S., and should prove interesting to Orchidists as well as others.

Meetings of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on November 8th and 22nd. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock p.m.

A flower of the brilliant little Paphiopedilum × Baron Schröder is sent by Messrs. James Veitch & Sons, of Chelsea. It is a seedling from P. × œnanthum superbum ♀ and P. Fairrieanum ♂, and combines the good qualities of both parents. The dorsal sepal is heavily spotted with reddish purple, and the undulate petals veined and suffused with the same colour, and prettily spotted on the lower half. Its history and ancestry were given at page 39.

Two very charming hybrids of Sophronitis grandiflora are sent from the collection of Sir Trevor Lawence, Bart., Burford, Dorking, by Mr. White. Sophrocattleya × eximia is descended from Cattleya Bowringiana ♀ and Sophronitis grandiflora ♂, and has a flower most like the latter in general shape, 4 inches in diameter across the petals, and of the most brilliant magenta crimson, with some darker veins on the lip. Sophrocattleya × Calypso was raised from Sophronitis grandiflora ♀ and Cattleya Loddigesii ♂, and most resembles the Cattleya parent in the shape and colour of the flower. Both are very dwarf in habit, and are most elegant little plants.

A flower of Lælia pumila delicatissima is also sent from the same collection. It is blush white, with a light purple area on either side of the lip, connected by a similar curved line in front of the crest. It is a very charming variety.

A twin-flowered scape of a very pretty seedling, evidently derived from Paphiopedilum Charlesworthii and P. × Harrisianum, is sent from the collection of H. J. Ross, Esq., of Florence, Italy. The scape much resembles the latter in character, also the markings of the leaf, the shape of the lip and staminode, and the prettily veined upper sepal. But the horizontal petals, and the colour of the staminode, and indeed of the flower

generally, also show the influence of P. Charlesworthii, and we refer it to Paphiopedilum × bingleyense.

Mr. Ross alludes to the "curious seedling," growing on a green seed pod of Cypripedium × Lathamianum (see page 357 of our last volume), and adds that the pod in due time matured and dried up, and the seedling was then cut off and pinned down at the base of another plant, where it is doing well.

A similar case now presents itself with Angræcum citratum, for Mr. Ross writes:—"It may interest you to know that I have an Angræcum citratum which carries at the extreme apex of the last flower spike a sturdy seedling with two leaves and three vigorous roots." The case is certainly interesting, but is it really a seedling? Young plants of Phalænopsis are sometimes produced on the flower spikes, but they are developed from buds, not from seeds, and the question arises whether the cases mentioned are not analagous.

Mr. Ross has also a curious spike of Oncidium Papilio, which he describes as bearing two open flowers back to back, and as it is a fine variety the effect is very handsome. The flowers, as is well known, are usually borne singly. Mr. Ross adds:—"I have a number of these plants, and they are always in flower throughout the year."

The September number of Messrs. Cogniaux and Goossens' *Dictionnaire des Orchidées*, which has just reached us, contains figures of Cattleya Eldorado, C. × Vulcain, Cypripedium × aureum var. Cyrus, C. × Adrastus var. Hurstii, C. × Cardosoanum, Epidendum × elegantulum var. leucochilum, Miltonia Regnellii var. Veitchiana, Odontoglossum coronarium, O. crispum var. Madame Emile Praet, O. Hunnewellianum var. Madouxianum, "O. luteopurpureum var. mulus tenebrosum" (which should have been called O. × mulus var. tenebrosum, being a hybrid between O. luteopurpureum and O. gloriosum), Oncidium nubigenum and Spathoglottis × aureo-Vieillardii.

A flower of the charming little hybrid Cypripedium × Muriel Hollington is sent from the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, by Mr. Young. It was raised in the collection of A. J. Hollington, Esq., of Enfield, by Mr. Ayling, and flowered in 1891, when it was described as a hybrid between C. niveum and C. insigne. The latter parent has since been doubted, and it has been stated that it came out of the same batch as C. × Aylingii, of which C. ciliolare was the other parent. A comparison of the plants in question only serves to confirm the original record. The two hybrids are quite dissimilar, and the present one has, not only the general shape of C. insigne, but the characteristic fold at

the apex of the dorsal sepal, and the green tubercle in the centre of the staminode, besides flowering at the same time. The ground colour is white, with lines of minute dots on the lower part of the dorsal sepal, a purple reticulation on the upper side of the basal half of the petals, and a trace of similar reticulation on the front of the lip. It is very beautiful, and one of the best of the niveum hybrids.

Flowers of the richly-coloured Dendrobium × Leeanum atropurpureum, which received an Award of Merit from the R. H. S. on October 23rd, are also sent from the same collection, and a three-flowered inflorescence of Cattleya labiata, in which the sepals are broad and petal-like, and the inner halves of the lateral pair coloured like the disc of the lip. It is a striking form, and Mr. Young states that this is the third or fourth time that the flowers have presented this abnormal character.

Mr. Young also states that a spike of Dendrobium spectabile in the collection is bearing fifteen flowers, which is probably a record up to the present.

A splendid plant of Cattleya Bowringina has just flowered in Messrs. James Veitch and Sons' Nursery, at Langley, Slough. Mr. Seden writes that it has three heads of bloom, which bear respectively 20, 27, and 33 blooms, and presents a grand sight.

A flower of the pretty, clear yellow, and unspotted Odontoglossum crispum aureum is sent by M. Florent Claes, of Brussels. It has the typical O. crispum shape, crest and column wings, and should develop into a good thing, for the plant is at present small. It has flowered out of M. Claes' last importation.

A photograph of a remarkable plant of Dendrobium thyrsiflorum is sent by H. Rider Haggard, Esq., Ditchingham House, Norfolk. The plant bloomed in the spring, carrying eleven racemes, and again in September, when, as the photograph shows, it gave eight racemes. This double flowering is remarkable, and would render the plant valuable if it proved to be a constant character.

A flower of Paphiopedilum × miniatum is sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool. The plant was purchased from Messrs. John Cowan & Co., of Gateacre, as "Curtisii × insigne Chantinii," whose characters it well combines. The specific name has been used for two different hybrids, but as the one from P. Spicerianum × Fairrieanum is P. × Niobe, it is free for the present one. A good flower of P. × Ashburtonæ Barteti is also sent from the same collection for comparison.

ORCHID PORTRAITS.

CŒLOGYNE PANDURATA.—*Gartenflora*, 1900, p. 505, t. 1480.

CYPRIPEDIUM × W. R. LEE, OAKES AMES VAR.—*Amer. Gard.*, xxi., p. 617, fig. 132.

CYPRIPEDIUM × MRS. F. L. AMES.—*Gard. Mag.*, 1900, p. 656, with fig.

CYPRIPEDIUM × Y'MIR VAR. HALLII.—*Amer. Gard.*, xxi., pp. 680, 681, fig. 144.

DENDROBIUM JERDONIANUM, Wight.—*Bot. Mag.*, t. 7741.

EPIDENDRUM MEDUSÆ.—*Gartenflora*, 1900, pp. 516, 517, fig. 66.

LÆLIO-CATTLEYA × NYSA.—*Journ. Hort.*, 1900, xli., p. 329, fig. 91.

ODONTOGLOSSUM TRIUMPHANS VAR. RAYMOND CRAWSHAY.—*Gard. Mag.*, 1900, p. 685, with fig.

ODONTOGLOSSUM × WATTIANUM.—*Journ. Hort.*, 1900, xli., pp. 348, 349, fig. 96.

ODONTOGLOSSUM × WATTIANUM CRAWSHAYANUM.—*Gard. Chron.*, 1900, xxviii., p. 286, fig. 83; *Gard. Mag.*, 1900, p. 656, with fig.; *Journ. Hort.*, 1900, xli., p. 349, fig. 97.

SOPHROCATTLEYA × EXIMIA.—*Journ. Hort.*, 1900, xli., p. 373, fig. 103.

CORRESPONDENCE, &c.

(*Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily*).

W. H. F., Flixton. The flower sent is Oncidium Jonesianum true, and a very good form of the species.

I. B., Zurich. The flowers sent are Bollea Lalindei, Colax placanthera, and a Lycaste which is not recognised. It is distinct from L. Schilleriana, and we have previously failed to identify it.

J. H. The law of priority, in our opinion, was never intended to protect and preserve inaccuracies in spelling, which are sometimes mere printers' errors. Such an interpretation would prevent an author from correcting his own name after it had once been published, and we could give some ludicrous examples of what it would lead to. Neither was it intended to protect names which are given in distinct contravention of the laws of botanical nomenclature. Such a name we consider ourselves at liberty to amend.

The proposed arrangement of the Cypripedium group in two genera, to which you allude, is unworkable, and not in agreement with the facts as we now know them. Of course in the sense of using the old names because they are more intelligible at present is quite another matter. There was just as strong an objection raised against the use of two generic names a few years ago.

E. W. Good forms of Dendrobium, Phalænopsis, and Cattleya labiata.

Photographs received with thanks. J. B., E.A.O.

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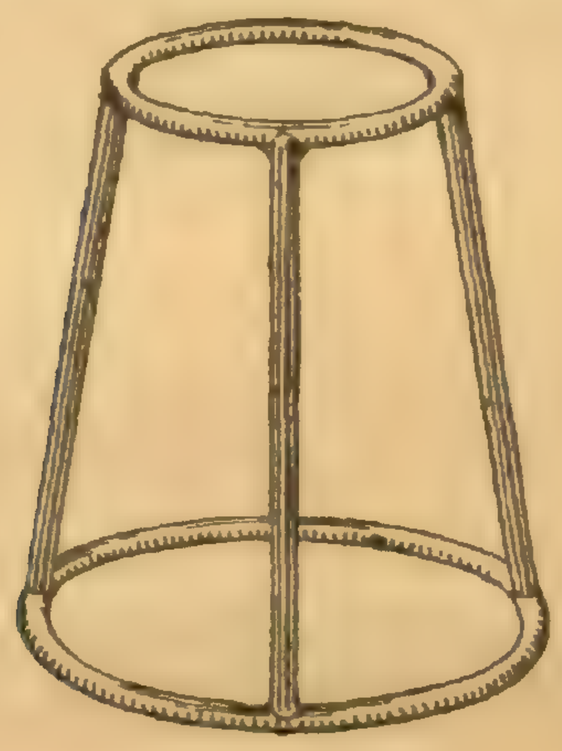

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MEETINGS of the COMMITTEE, for the purpose of adjudicating upon the Orchids submitted, will be held on November 8th, and 22nd, 1900, at 12 o'clock prompt. Open to members from 1 o'clock to 3 o'clock p.m.

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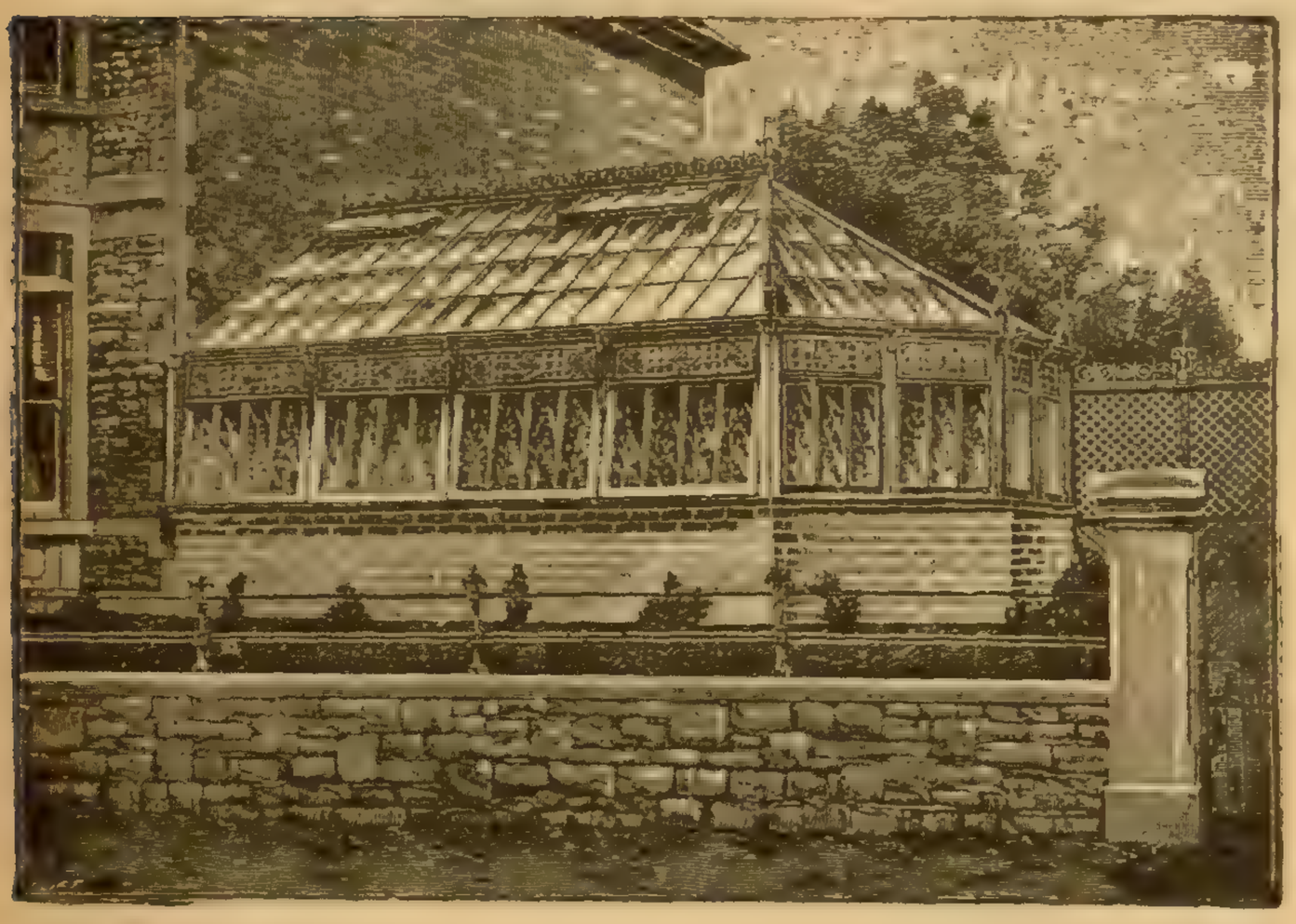

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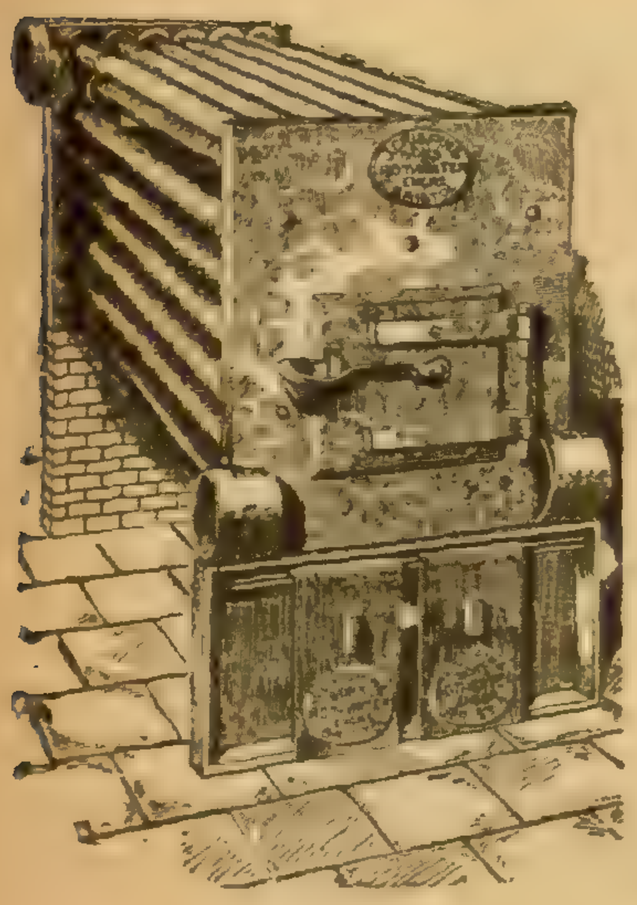

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THE ORCHID REVIEW:

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DEVOTED TO ORCHIDOLOGY.

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Some, indeed, seem to be beneficial instead of injurious, and it has been suggested that one of the reasons why Orchid seeds do not germinate under certain conditions is owing to the absence of certain fungi which in some way are essential to the process. This is another matter which I should like to see followed up, for the germination of Orchid seeds is a question of great practical importance, and much yet remains to be learnt before we can depend upon raising a crop, even with the best of seeds. But how far the assistance of beneficent fungi is to be relied upon in the matter remains to be proved.

Messrs. Charlesworth and Co., of Heaton, Bradford, have succeeded in raising a most charming little hybrid, which, under the name of Sophrolælia × Eros, received a First-class Certificate from the R.H.S. on October 23rd. The name, however, raises a rather curious question. The parents are recorded (at page 348) to have been Lælio-cattleya × elegans and Sophronitis grandiflora, and the corresponding hybrid between the latter and Lælio-cattleya × Schilleriana was called Sophrocattleya × Veitchii. Neither of these names are strictly indicative of the origin of these hybrids, in whose parentage three genera are concerned. The case of Brassocatlælia affords an analagous example, that hybrid being derived from Brassocattleya × Lindleyana and Lælio-cattleya × elegans, and following this precedent it appears to me that the two plants above mentioned must be called Sophrocatlælia × Veitchii and Sophrocatlælia × Eros. This indicates both their origin and affinity, for as named at present they would appear to be different in their generic origin instead of being identical. Specifically, even, the two are very nearly allied, for they agree in being composed of Sophronitis grandiflora ½, and Lælia purpurata ¼; the difference is that the remaining fourth of S. × Veitchii was derived from Cattleya intermedia, and of S. × Eros from C. Leopoldi. Both are charming little plants.

ARGUS.

ODONTOGLOSSUM × DENISONÆ DIMORPHIC.

A REMARKABLE inflorescence of Odontoglossum × Denisonæ was exhibited at the R.H.S. meeting on November 20th, by Mrs. Briggs-Bury, Bank House, Accrington, which bore two quite distinct kinds of flowers. The four lowermost flowers had long, rather narrow, very acuminate sepals and petals, ranging from 1¾ to 2 inches long by 5 to 6 lines broad, and the ground colour white, decidedly tinged with purple, especially behind, and bearing numerous red-purple spots, many of which were variously confluent. The five uppermost flowers had rather shorter, much broader sepals and petals, ranging from 8 to 11 lines broad, the colour clearer white, that is,

less tinged with purple, and the spots more distinct and of a less decided purple shade. One flower had been removed from the middle of the spike before I saw it, so that I cannot say whether it agreed with those above or below it, or was in any way intermediate. The difference between the two kinds of flowers was very striking, and a remark which I heard, that it looked as if O. crispum had been crossed with cirrhosum, but the cross had only affected the lower flowers, was very expressive, through only made in joke. It is well-known that O. × Denisonæ is a natural hybrid between O. crispum and O. luteopurpureum, and the peculiarity in the present example seems to be due to dissociation of the parental characters. The upper flowers are most like O. crispum, though the shape of the lip and details of the crest are unmistakably intermediate, and reveal its hybrid origin. The lower flowers are much nearer O. luteopurpureum in the shape of the sepals and petals, but not in colour, and the two central teeth of the crest are in every instance much smaller than in the five uppermost flowers, though in other respects the lip is equally intermediate in character. It is a remarkable plant, and it will be interesting to see if the character repeats itself another year. Hybrids usually resemble a mosaic, rather than a complete blend of their parental characters, but the details seldom work out so differently in flowers on the same plant.

R. A. Rolfe.

SALE OF THE ASHFORD COLLECTION.

The collection of G. Shorland-Ball, Esq., Ashford, Wilmslow, was sold by Messrs. Protheroe and Morris on November 13th and 14th, and numerous choice plants fetched very good prices. A good example of Cypripedium callosum Sanderæ realized 120 guineas, and smaller ones went for correspondingly high prices. A good plant of C. insigne Sanderæ fetched 100 guineas, C. insigne Luciani, 90 guineas; C. insigne Bohnhoffianum, 56 guineas; C. Lawrenceanum Hyeanum, 55 guineas; C. venustum Measuresianum, 48 guineas; C. insigne Harefield Hall variety, 45 and 40 guineas respectively for the best examples; C. × Gertude Hollington, 23 guineas; and C. × Alfred Hollington, 22 guineas. A fine plant of Cattleya labiata in flower was sold for 85 guineas, and a smaller plant 50 guineas. An unflowered plant of the chaste and beautiful Lælia præstans alba realized 60 guineas. Some plants of hybrids of Lælia Digbyana, with the best Cattleyas, fetched good prices, ranging from 10 to 46 guineas, the latter price being obtained for C. × Hardyana × L. Digbyana. The best Odontoglossums and Dendrobiums also realized good prices. The first day's sale resulted in a record total of over £3,000, and the amount realized at the sale was £4,666.

RAISING ORCHIDS FROM SEED.

As remarked by Mr. J. M. Black, at page 298, anything about raising Orchids from seeds has a value, and as he has taken one side of the question for a text, namely, the use only of robust plants as seed-bearing parents, it would appear that there is another view that might be taken by others.

It must be conceded that the aim and object of all vegetation is the perpetuation of its kind. Take for illustration the common Shepherd's Purse, as being familiar to all. If the soil where it is growing is insufficient to nourish more than two leaves besides the cotyledons, still seeds will be produced, if only two capsules; and those same seeds, if given good soil, will make plants as strong and vigorous as those saved from well nourished plants—there will be no perceptible difference.

This rule applies throughout the whole vegetable kingdom, and it is a well known fact that flower seeds are largely grown on soil that is not over-rich, the idea being to induce plants to prepare for the perpetuation of their kind, rather than the gross, succulent herbage that takes no thought for the morrow.

As to Orchids raised from seeds saved from weak seed-parents being naturally delicate, we should be rather inclined to the view that the plant, if strong enough to mature seeds, even though it died in the attempt, would not transmit its weakness in a hereditary way to its offspring. A good seed is a good seed: there would surely be a larger proportion of chaff than usual, but the seeds would be as fully endowed as if from a vigorous parent—the fact that we cannot get them beyond the initial stages of germination only proves our inability, not the impossibility, to raise them.

We have raised thousands of Orchids from seeds during the past few years, and watched the various stages closely—there is no more fascinating study—and how often the seeds have swelled and turned green, but refused to get as far as the leaf-point stage, we dare not contemplate. It is better to look upon what we have, and of these, how many can be shown as germinating on isolated tufts of peat, as thick as they can stick, and the rest of the seed-bed barren of results! These tufts seem to have held just the proper quantity of moisture in suspension for the right conditions, and results have followed. If it were not for these little bunches of plants, we should perhaps blame the seed or its parents—but how unjustly!

If we take three of the strongest growing Orchids, Lælia purpurata, Cattleya Mossiæ, and C. Warscewiczii (gigas), they are the poorest possible parents we have tried as seed bearers, when we come to count up the results, though seeds are produced in great abundance—prodigality, we might say. Mr. Black rightly says that it would take a good deal of courage to guarantee plants from any lot of seeds, but in our experience in

fifteen trials where Lælia cinnabarina was used either way as a parent, every one of them grew; the last two sowings made from crosses with L. Cowani and L. Jongheana have not been made more than three weeks, and the seedlings have some of them already reached the green globe stage.

The moral we wish to point out is, that the weakest of parent plants will produce strong seedlings, in a greater or less degree, just as vigorous ones will, and do, and we have lost more capsules in the initial stages on strong plants than on weak ones.

We are, however, only too glad to learn of the experience of others in seed-raising. Very little on the subject is written in books, and those who know most say least about it, for various reasons, and an interchange of ideas and experiences among readers must be of value. It should, perhaps, be added that our experiments have all been made with Lælias, Cattleyas, Sophronitis, and Epidendrums.

E. O. ORPET.

South Lancaster, Mass., U.S.A.

NOVELTIES.

MORMODES OBERLANDERIANUM (Kränzl. in *Gard. Chron.*, 1900, xxviii, pp. 317, 318, fig. 96).—Discovered by Mr. F. C. Lehmann, in 1897, growing associated with Catasetum Bungerothii, on the banks of the Rio Meta, in the vicinity of Cabuyare, Orocue, and the once famous town of Macuco, now a mere ruin. A few plants were brought to Europe, and given to Dr. Oberlander, of Dresden, in whose collection it flowered in the spring of 1899. The sepals and petals are lemon-yellow spotted with rose, and the lip apricot-coloured, spotted with rose on the sides and base. It is apparently closely allied to the very variable M. buccinator, which has been described as the most polychromic Orchid in existence.

STANHOPEA STENOCHILA (Lehm. & Kränzl. in *Gard. Chron.*, 1900, xxviii, p. 369).—Described as an ally of S. tricornis and S. connata, but having smaller flowers, not exceeding in breath those of a medium sized S. ecornuta. Sepals pure white, petals apricot coloured with purplish blotches on the basal half, and the lip ivory white at the base with purple blotches inside, with the middle and front parts yellow. It was collected on the west coast of Colombia, at a moderate height above sea level, by Mr. F. C. Lehmann, of Popayan. It is described from spirit specimens and notes, but plants are said to have been sent home and purchased by Sir Trevor Lawrence, Bart.

LÆLIO-CATTLEYA × BINOTI (Cogn. in *Gard. Chron.*, 1900, xxviii, p. 370).—Flowered in the establishment of M. A. A. Peeters, of St. Gilles, Brussels, in an importation of Cattleya bicolor sent from Brazil by M.

Binot, and believed to be a hybrid between that species and Lælia pumila, owing to its intermediate character. The sepals and petals are purplish rose, and the lip bright crimson-purple, with small white side lobes tinged with rose, and some orange yellow at the extreme base.

PAPHIOPEDILUM TONSUM.

(*See* FRONTISPIECE).

THE frontispiece to the present volume represents a plant of Paphiopedilum tonsum from the collection of Oakes Ames, Esq., North Easton, Mass. It is a particularly good form, and Mr. Ames states that it was used to obtain P. × Olivia, which in his estimation is the most beautiful of the P. niveum hybrids. The absence of cilia from the petals of P. tonsum, which constitutes one of its most marked characters, and from which its specific name ("*shorn*") was derived, is well shown in the photograph, as well as the markings of the flowers and leaves. The species is a native of Sumatra, and was discovered by Curtis, though unknown to himself at the time, for the original plants were found mixed with P. Curtisii, which the collecter in question discovered at some distance from Pahang, at an elevation of 3,000 to 4,000 feet, on the great mountain chain of the island, and sent home to Messrs. James Veitch & Sons, of Chelsea, in 1882. Both the species flowered for the first time in cultivation in Messrs. Veitch's establishment, in 1883, and are now well-known in collections.

LÆLIO-CATTLEYA × GOTTOIANA.

WHEN this handsome natural hybrid originally appeared in the collection of E. Gotto, Esq., The Logs, Hampstead Heath, in 1891, its origin was rather a puzzle. It was exhibited at a meeting of the R.H.S. on June 23rd, 1891, under the name of Lælia Gottoiana, and received a First-class Certificate. In the report of the meeting it is recorded that "E. Gotto, Esq. (gr. Mr. H. Banks), had Lælia grandis, a well marked form, and L. g. superba, a paler form of the former; . . . L. Gottoiana, an apparent natural hybrid with Cattleya labiata blood in it—the flowers were of unusual size" (*Gard. Chron.*, 1891, ix., p. 793). I understood at the time from Mr. Banks that the plant was received, with the others mentioned, under the name of Lælia grandis. The latter was well known to be a native of Bahia, but being unable to find a record of any Cattleya of the labiata group from Bahia, and looking for other possible combinations, I suspected that Cattleya Warneri and Lælia Boothiana might be the parents, though the large size of the flower and the acute petals of the hybrid were not quite what one would expect to find in such a cross. Then I discovered

that the natural hybrid Cattleya × Whitei was said to have been found "growing on a tree in company with C. labiata and C. Schilleriana," and the latter species indicated Bahia as the habitat. Here then was further proof that some Cattleya of the labiata group grew in Bahia—could this be the lost habitat of C. labiata? Scarcely, for the much-desired plant had not been found, and the records were explicit as to the habitat being near Rio de Janeiro. C. Warneri, it may be remarked, was then indicated as growing some distance south-west of Rio de Janeiro, though the precise habitat had not been divulged; when, however, a plant of L.-c. × Gottoana flowered in the collection of R. H. Measures, Esq., The Woodlands, Streatham, out of an importation of Cattleya Warneri, the mystery vanished. Before this, Lælia tenebrosa had been recognized as a distinct species, and its habitat in Bahia was known, while, singularly enough, another natural hybrid from Bahia appeared with Messrs. F. Sander & Co., evidently derived from the true L. grandis and C. Warneri, which I called Lælio-cattleya × albanensis (*Orch. Rev.*, i., p. 339). I then described L.-c. × Gottoiana (*l.c.*, p. 338), and now the parentage has been proved. Mr. James Douglas, of Great Bookham, exhibited a plant at the R.H.S. meeting on November 6th last, which he had raised from Cattleya Warneri ♀ and Lælia tenebrosa ♂, and which is unmistakably identical with the wild plant. The parentage of L.-c. × albanensis has already been proved by a cross made by Messrs. Linden, between Lælia grandis ♀ and C. Warneri ♂, which was described under the name of Lælio-cattleya × Varjenevskyana (*see Orch. Rev.* iii., p. 164). Messrs. Sander have also seedlings raised from both these crosses (*l.c.* v., p. 308). Mr. Douglas must be congratulated on having proved the origin of this interesting and beautiful plant.

R. A. R.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

At the meeting of this Society held on November 8th, a number of good Orchids were shown, including the following to which awards were made. The Committee was represented by:—G. Shorland Ball, Esq. (in the chair), and Messrs. Leemann, Law-Schofield, Parker, Peters, Upjohn and Weathers (Hon. Sec.).

S. Gratrix, Esq., Whalley Range (gr. Mr. McLeod), received First-class Certificates for Cattleya labiata alba and C. l. Gilmouræ, and an Award of Merit for Cypripedium insigne Gratrixiæ. Several other interesting things were included in a small group, to which a Vote of Thanks was accorded.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), received First-class

Certificates for "Cypripedium insigne Sanderæ Peeters' var.," and Cattleya labiata Peetersii superba, and an Award of Merit for "C. l. Brazil." These were included with many others in a very fine group, to which a Silver-gilt Medal was given.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), exhibited some good Cypripedims, and Awards of Merit were given to Cypripedium insigne magnificum, C. × nitens Wrigleyanum, C. × Mimosa, and C. × Tityus, and First-class Certificates to C. × Leeanum Clinkaberryanum and C. × L. magnificum.

The Hon. Mrs. Bass, Burton-on-Trent (gr. Mr. Nisbet), received an Award of Merit for Cattleya × Chloris.

F. W. Tattersall, Esq., Morecambe (gr. Mr. Grant), staged a small group, for which a Vote of Thanks was awarded.

M. Lees, Esq., Stretford, showed Cypripedium insigne Chantini.

Mr. John Robson, Altrincham, showed Odontoglossum crispum giganteum, Cypripedium × Proserpo (A. M.), C. Tityus, C. × Actens and C. × Milo.

Messrs Linden, Brussels, showed a small group of cut blooms and were awarded a Vote of Thanks.

At the meeting held on November 22nd there was a larger display of Orchids, including many fine things.

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), exhibited a beautiful group of Cypripediums, consisting largely of hybrids with some fine forms of C. insgine. A Gold Medal was awarded. First-class Certificates were given to C. × Leeanum conspicuum and C. × Swinburnei magnificum.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Edge), staged a handsome group, to which a Silver-gilt Medal was given.

T. Baxter, Esq., Morecamble (gr. Mr. Roberts), received a First-class Certificate for Miltonia vexillaria Leopoldi and Awards of Merit for Odontoglossum crispum Orion and O. × mulus leopardinum.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), received a First-class Certificate for Miltonia vexillaria Leopoldi and an Award of Merit for Odontoglossum × Wilckeanum aureum.

Mr. P. Weathers, Botanic Gardens, Old Trafford, received an Award of Merit for Odontoglossum maculatum Thompsoni.

Messrs. Stanley Ashton & Co., Southgate, received a First-class Certificate for Lælio-cattleya × Cappei Southgate var.

The Stone Orchid Co. (Sec. Mr. F. Stevens), received a First-class Certificate for Odontoglossum crispum Catherine Harding.

Mr. A. J. Keeling, Bingley, received an Award of Merit for Pleione maculata alba.

CATTLEYA × VICTORIA-REGINA.

THE annexed figure represents the handsome Cattleya × Victoria-Regina, which caused so much discussion a few years ago when it was thought to have been introduced in quantity. Most of the plants, however, proved to be C. Leopoldi, which grows with C. labiata at Pernambuco, and the circumstance explains the origin of the plant figured, which is evidently a natural

Fig. 48. CATTLEYA × VICTORIA-REGINA.

hybrid between them, though such [an idea] was strongly opposed at first. Its history was given in detail in our second and third volumes. The plant still remains very rare, and we hope to be able to announce the flowering of home-raised examples in due time. Our photograph was taken in the collection of W. Thompson, Esq., Walton Grange, Stone, by Mr. Stevens.

CATTLEYA LABIATA AND ITS HABITAT.

When the fine old Cattleya labiata was re-discovered in the province of Pernambuco a few years ago, and introduced in quantity, there was some discussion about the locality in which Swainson originally obtained it, but no records could be found to clear up the matter, and there was a general belief that it was somewhere in the neighbourhood of Rio de Janeiro, where Gardner afterwards obtained it. I collected all the information on the subject that I could find in two articles published in the *Gardeners' Chronicle* (1891, x., pp. 366-368), and in these pages (vol. i., pp. 329-331), which seemed to confirm the current view, but now most fortunately I have discovered the missing information. In the first volume of the *Edinburgh Philosophical Journal*, published in 1819, is an article entitled, "Sketch of a journey through Brazil in 1817 and 1818. By Mr. Swainson, of Liverpool. In a letter to Professor Jameson." After pointing out his determination, made in the autumn of 1816, to visit South America, and the object of this journey, which was briefly to make collections "in all branches of natural history," he proceeds as follows :—

"Instead of following the example of all my fellow-labourers, by going in the first instance to Rio de Janeiro, I landed, about the end of December, 1816, at Recife, in the province of Pernambuco, 8 degrees south of the line. This province had never been visited by any modern naturalist, and I found that it possessed features, both in its geography and natural history, widely different from the southern provinces. After gaining general ideas of the climate, manners, &c., I made preparations for a journey into the interior, but these were suddenly rendered useless by the memorable revolt of the 6th of March, 1817, of which I was an eye-witness. This confined my researches to a limited extent of country round the city; yet so many new and striking objects presented themselves, that I was amply employed during all the time that country remained in this disturbed state. . . . On the restoration of tranquillity, after remitting all my collections, drawings, &c., home to England, I quitted Pernambuco in June, 1817, and, with a small train, directed my course (by a circuitous route towards the interior) for the great river St. Francisco. The face and productions of the inland parts differ most essentially from those of the coast. Water in these dreary tracts is at all times scarce, and the excessive drought that had prevailed frequently exposed us to great privations, and even danger: sometimes our only resource was the water found in crevices and hollows of rocks, rendered putrid by decomposed vegetables. At length we reached the village of Penedu, in the beginning of August. The botanical subjects collected on this journey were numerous and interesting, particularly among the parasitic plants and cryptogamia, which, with the birds, insects, &c., were

mostly new. The drought in the interior rendered it impossible to proceed by that route to St. Salvador, and I accordingly embarked for that place in a canoe, and arrived in eight days. Here I found the two Prussian naturalists, Messrs. Sellow and Freyries, who had come overland from Rio de Janeiro with the Prince of Neuwied, and had remained in the city from ill health, and also to arrange their collections. I left them, however, soon, and made nearly a complete tour of the bay, and again set out for the Sertem or inland country, where I continued, varying my residence, until the month of March following, having in this space made immense collections in every branch of natural history, particularly in the ornithology of the interior, which differs both in species and novelty from those procured by the Prussian travellers on the coast.

"In the month of April I embarked for Rio de Janeiro, more for the sake of comparing the southern with the equinoctial regions of Brazil, than of increasing my collections in a part already well explored. I found the summer nearly terminated, but the heat far above that of Pernambuco, though Rio de Janeiro is in lat. 22° 54′, and Pernambuco in lat. 8°. Travellers and men of science from the Austrian, French, Russian, and Tuscan Courts were here. Few of them, however, had been out of the province, and, by some unfortunate mismanagement, five of the Austrian party returned home shortly after my arrival. Among these travellers was Professor Raddi, director of the museum at Florence, who was indefatigable in forming a fine collection of the fruit and seeds of the country. With him I made an excursion to the immense range of mountains, called the Organ Mountains, which for leagues are covered with almost impenetrable forests, abounding in ferns, melastomas, and insects quite peculiar to them. From Dr. Langsdorff, the Russian Consul-General in Brazil, I received every assistance and the most liberal attention; and having with his aid embarked my collection, with many desiderata, I returned to England in August, 1818. . . .

"Seeds of many new and little-known plants have been sent to Kew and other botanic gardens, where they are now flourishing. An interesting collection of parasitic plants, together with another of cryptogamia, I presented to my friend W. J. Hooker, Esq. These last have begun to appear in his elaborate work *Musci Exotici*. My herbarium, containing about 1,200 species, is particularly well preserved, the plants having been dried by a new process which will enable a botanist in a tropical climate to dry nearly 400 specimens in three days. It is very rich in ferns and grasses, as well as other genera little known as natives of the tropics.

"I have, besides, a portfolio of drawings representing the most striking picturesque and vegetable scenery, together with maps of the different routes pursued."—*Edin. Phil. Journ.* i., pp. 369-373.

This is extremely interesting, though taken by itself it does not clear up the habitat of Cattleya labiata—which indeed is not mentioned—but now let us turn to Hooker's *Exotic Flora*, where a figure of the plant is given (vol. iii., t. 157). Here we find the following note by Mr. Cattley:—

"The most splendid, perhaps, of all Orchideous plants, which blossomed for the first time in Britain in the stove of my garden in Suffolk, during 1818, the plant having been sent to me by Mr. W. Swainson, during his visit to Brazil." The month was November, as stated by Lindley in his *Collectanea*, t. 33.

That this a note from one of Mr. Cattley's letters is evident from the context—for the fact is not expressly stated, and the remark is not given in parenthesis. Dr. W. J. Hooker, however, goes on to say:—

"The individual here delineated is an offset from the parent plant just mentioned, and it flowered at the Glasgow Botanic Garden in November, 1824, continuing in great beauty for several days. The agreeable odour, which Mr. Lindley mentions as having been perceptibly exhaled by the flowers of the specimens from which his figure in the *Collectanea Botanica* was taken, was not evident in the blossoms of the present individual, although Mr. Cattley's plant was derived from the same source."

These records serve to establish the following facts:—Swainson arrived in Pernambuco about the end of December, 1816, and, owing to political disturbances, had to confine his collecting to a limited extent of country round the city of that name, where, however, he found so much new and striking that he was amply employed. On the restoration of tranquillity he quitted Pernambuco in June, 1817, having first dispatched all his collections, drawings, &c., to England. These included some "parasitic plants" (among which Orchids were then included) for Dr. Hooker, and others for Mr. Cattley, and one of the latter was the splendid plant which flowered in November, 1818, and was sent to Lindley, who established a new genus for it, calling it Cattleya labiata. Two other plants sent by Swainson at the same time were Oncidium barbatum (*Lindl. Coll. Bot.*, t. 27) and Catasetum Hookeri (*l.c.*, t. 40). That these plants all came with the collections sent from Pernambuco is evident from Swainson's account, for he only left Rio with the later ones in August, 1818, and in those slow sailing and coaching days there would not have been sufficient time to get plants from the latter home and in flower in such a short interval of time, whereas the earlier ones would have just had time to become established.

It may be as well to anticipate a possible objection to the remark that Swainson's locality has remained unknown. It is true that when this Cattleya was re-introduced it was said to be from "Swainson's hunting ground," but the remark only applied to Brazil in a general sense, and it is now well known that the plant was re-discovered quite independently of any infor-

mation obtained from Swainson. Mr. Boyle, in his account of the "The Lost Orchid," remarks on this particular point :—"It may well be asked what Mr. Swainson was doing, if alive, while his discovery thus agitated the world. Alive he was, in New Zealand, until the year 1855, but he offered no assistance. It is scarcely to be doubted that he had none to give. The Orchids fell in his way by accident—possibly collected in distant parts by some poor fellow who died at Rio. Swainson picked them up, and used them to pack his lichens." He also speaks of collectors that "went over every foot of the ground which Swainson seems, by his books, to have traversed."

Had the above facts been generally known, the history of the "lost Orchid" would have been vastly different, and would probably never have been written at all. And it is not a little remarkable, considering how long and how ardently the plant was searched for without success, that the above facts should have remained undiscovered.

R. A. Rolfe.

CALENDAR OF OPERATIONS FOR DECEMBER.

By H. A. Burberry, Orchid Specialist, King's Heath, Birmingham.

For the general management of the houses refer to last month's Calendar. For the temperatures the same may also be said, but in addition I herewith append figures which must be the very lowest the thermometers are allowed to descend to, and then only for short periods, or some trouble may arise:—

Cool house—40°.

Intermediate house—48°.

East Indian house—55°.

The above must be considered as the lowest readings allowed, and these only during the early mornings until the fires are again pushed forward to produce the warmth for the day, and very little assistance can now be expected from the sun for this purpose.

This is one of the months of all others when it is advisable to be extremely careful with the watering can. It is really remarkable for what a length of time nearly all the species will remain plump and healthy without water at this season; that is, of course, supposing they are vigorous and have been, during the past few months, gradually but well ripened off. With unhealthy or weakly specimens one has, of course, to take such circumstances into account and watch them somewhat more closely in order that they may not suffer in the slightest degree from over dryness. Not only will plants resting require but little water, but also those in full growth, as many of the Miltonias, Oncidiums, Odontoglossums, and Cypripediums require extremely little, and remain much more healthy if kept pretty dry during the dullest winter months.

See that the glass is well cleaned from dirt, both inside and out, so that all the available light is obtained, and also that the plants are staged so that each one, whether large or small, may have its due share of the same. About 3 feet away from the roof-glass should be the farthest distance to stage a plant, whilst care must also be taken not to get them too close at this season, or injury from cold may occur; at least 1 foot from the glass should therefore be allowed for safety. If Orchids are grown in company with other warm greenhouse plants—either flowering or foliage (and there is no reason why that should not be)—see that the Orchids do not suffer at the expense of the others. This does occur when the grower has a biased mind, loving the one—or, perhaps I might say, understanding the one—more than the other. I sometimes come across Orchids placed down on the stage, with no attempt whatever made to raise them nearer the light for the winter months, whilst, to make matters worse and still darker, above them are towering the leaves or branches of some specimen Croton, Fern, or other plant. This, I may say, is not giving the Orchid a fair chance.

Cattleya Warneri is an early, summer-blooming species, and naturally starts to push forth new growth at this season. Any attempt to keep it back by drought or cold will end in failure. It should not, however, be given great heat, nor much water, as both are now undesirable. It should simply occupy the warmest end of the Cattleya house, having just sufficient moisture at the root to enable it to move slowly along. I always prefer baskets for this species, guiding the course of the new growth, if possible, so as not to grow over the sides; one basket then does for many years without root disturbance. Other Cattleyas or Lælias which naturally grow at this season, like L. purpurata and L. crispa, should likewise have the warmest end of the house, such little differences in treatment being all required. Cattleya Gaskelliana, having now had a good rest, will show signs of activity, and consequently should be slightly more encouraged.

The Dendrobium season commences this month with a few of the earliest kinds. Some few are already in flower, principally D. moniliforme, D. × Cassiope, D. × endocharis, the earliest matured and rested plants of D. aureum, D. nobile, D. × Leechianum, and some few others. For the majority it is still too early, and they should be kept back until February and March. All that have been brought on to flower at an earlier date must still be kept back in an Intermediate temperature, and not by any means pushed on in a hotter house until the proper season arrives, or they will assuredly lose their robust health and become weaklings. If good quality blooms are required, Dendrobiums must not be forced to open quickly in heat, but allowed to come on slowly in Intermediate temperature.

Lælia anceps and its varieties are now at their best, and will last in bloom throughout the present month. This species is therefore invaluable

for giving a display for the Christmas season, for which reason a large quantity should be grown. If given cultural treatment as previously advised in these Calendars, it is one of the least difficult species to grow, and can always be relied upon to bloom well.

The deciduous Calanthes are also highly prized for mid-winter blooming. They should now receive very little water indeed, and, after blooming is over, none at all, but be stored away in some dry place in the warm house, such as a shelf or some similar place where there is good light. It is letting Calanthes rest in a Cool temperature, and perhaps in a dark, damp position, that is mainly accountable for the disease known as the Spot appearing during summer when growing.

Odontoglossum cirrhosum is now sending up flower spikes. It is an extremely pretty species when well grown. It does very well in the Cool house during summer, but should always be removed to an Intermediate one for the winter. It is so with O. Harryanum, O. Insleayi and its varieties, O. hastilabium, and O. Reichenheimii. O. citrosmum, an intermediate species, which has now completed its growth, must be kept very dry for the winter, in order to secure flower spikes in the spring.

A grand old Orchid for winter is *Zygopetalum intermedium*. Its spikes are now far advanced, and the flowers will soon expand. Immediately after they have faded is a very good time for re-potting, as new roots then push forth. The pot should not contain more than one third its depth of drainage, being then filled up with a rather generous soil, composed of turfy loam and peat in equal proportions, with a liberal quantity of sharp sand added, into which the plants should be re-potted when pot-bound with roots. A grand thing also is Miltonia spectabilis Moreliana, now in bloom—the colour is intense. Like all others of the same genus, it is safer at all times to under- rather than over-water. This species is best grown in baskets, in a mixture of two parts fibrous peat to one of moss pressed in firmly, and seems to prefer the Cattleya house in summer and the East Indian house in winter. If the new growths are trained so that they keep within the bounds of the basket, and the watering carefully performed, re-basketing in scarcely ever required. Non-disturbance of the roots should be the one great aim, not only with this species, but with most others also, therefore every possible means should be adopted to make the compost last the longest period in a sound and sweet condition. Careful watering, perfect drainage, and sound materials forming compost, are essential.

Keep Cœlogyne cristata dry and cold in a greenhouse temperature until the end of February, if successful blooming and strong growths afterwards are desired. When contemplating re-potting Cypripediums, remember that they always flower more freely when confined to rather small receptacles and are somewhat root-bound.

Get in a good supply of fresh sphagnum moss this month in case of hard frosts afterwards.

ORCHIDS IN SEASON.

CATTLEYA LABIATA is still making a brilliant display at the time of writing, and several beautiful examples have reached us. One sent from the collection of D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, has bright rose-purple sepals and petals and the front lobe of the lip of an intense crimson-purple, with a broad crisped margin much paler in colour. A second form in which the lip is almost identical with the sepals and petals in colour forms a most effective contrast. Both are excellent in form. A beautiful spray of Oncidium Forbesii, is also sent from the collection, together with Dendrobium Farmeri and Paphiopedilum Stonei, the whole forming a very charming little group.

Two very large and handsome forms of Cattleya labiata are also sent from the collection of Dr. Cranstoun, Broad Street, Ludlow, together with another having remarkably narrow and acute petals, which are almost sepal-like in character, while the lip is also narrow, especially at the base. All the other characters are those of C. labiata, and Mr. Godfrey remarks that the plant is apparently as healthy as the rest, so that it is difficult to account for the peculiarity, which may prove permanent. A very good form of Lælia pumila præstans is also enclosed, and a twin-flowered scape of Paphiopedilum × Ashburtonæ, which is said to always retain this character.

Two fine and dissimilar forms of Cattleya labiata are sent from the collection of E. F. Clarke, Esq., of Teignmouth, who remarks upon the well-known variability of the species. A flower of the pretty natural hybrid Lælio-cattleya × amanda is also enclosed. The forms of Oncidium varicosum noted at page 363 of our last volume have again flowered, and Mr. Clarke states that they are rather less dissimilar in size than last year.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL SOCIETY.

SOME beautiful Orchids were staged at the annual Chrysanthemum Show of this Society held at the St. James' Hall, Manchester, on November 15th to 17th, and the following awards were made:

Gold Medals were awarded to beautiful groups staged by Mr. James Cypher, of Cheltenham, and by Mr. John Robson, of Altrincham. Silver Medals went to Messrs. Charlesworth & Co., Heaton, Bradford, and to Messrs. Hugh Low and Co., Bush Hill Park, Middlesex.

BOLLEA LALINDEI.

ALTHOUGH not common in collections, the species of Bollea invariably command attention when seen in flower, on account of their remarkable shape, and frequently unusual colours. Photographs of the handsome Bollea Lalindei have been sent from Mrs. Brandt, of Zurich, one of which is here reproduced. The species is a native of Colombia, and was introduced by M. Lalinde, a resident in Medellin, through M. Patin. It first flowered in the collection of Messrs. James Veitch and Sons, of Chelsea, in 1874, when it was described by Reichenbach (*Gard. Chron.*, 1874, ii, p. 33), B. Patini, which was described by Reichenbach at the same time from dried materials sent by Patin (*l.c.*, p. 34), has proved to be a

FIG 49. BOLLEA LALINDEI.

form of the same species. It afterwards flowered in the collection of G. Herriott, Esq,, Cholmeley Park, Highgate, and was figured in the *Gardeners' Chronicle* (1875, iii. pp. 8, 9, fig. 1), and *Floral Magazine* (n. s., t. 147). B. Lalindei was also figured in the *Botanical Magazine* (t. 6331) from a plant which flowered with Mr. B. S. Williams, of Upper Holloway. It is nearly allied to B. cœlestis, another remarkable Colombian species too rarely met with in cultivation. The flowers are of a peculiar shade of mauve-purple, varying somewhat in depth of colour in different individuals, and the crest of the lip yellow.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AUTUMN-FLOWERING Orchids are now a very numerous class, and the display of these plants at the Drill Hall, Buckingham Gate, Westminster, on November 6th, was very fine. The members of the Orchid Committee present were :—H. J. Veitch, Esq., in the chair, and Messrs. H. Ballantine, H. J. Chapman, W. Cobb, J. Coleman, N. C. Cookson, De B. Crawshay, E. Hill, A. Hislop, J. Jaques, H. Little, H. M. Pollet, J. W. Potter, T. Rochford, A. H. Smee, H. Tracy, W. H. White, W. H. Young, and J. O'Brien (Hon. Sec.).

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a very interesting group, remarkable alike for variety and good culture, to which a Silver Flora Medal was given. It contained the handsome Vanda Sanderiana Burford var., a finely-flowered example of V. Kimballiana, Miltonia × Lamarcheana, Dendrobium sanguinolentum, Oncidium longipes, a fine example of the brilliant Habenaria militaris, Stenoglottis longifolia alba, Cattleya Bowringiana lilacina, Lælia × juvenilis, Masdevallia × Imogene, Calanthe × labrosior, Angræcum Leonis, Cypripedium purpuratum, C. × regale, C. × picturatum, C. × radiosum, C. × Pollettianum Burford var., C. × Morganiæ, C. × œno-superbiens, a fine plant of C. × œnanthum superbum, with twelve scapes, and Masdevallia macrura with fifteen flowers, Cultural Commendations being awarded to the two latter. An Award of Merit was also given to Masdevallia × Bocking Hybrid (cucullata × Veitchiana ?), a handsome hybrid raised in the collection of the late S. Courtauld, Esq., bearing an Indian-red flower with yellow centre, and most like M. cucullata in shape, and Botanical Certificates to Ansellia humilis and Masdevallia burfordiensis, the latter one of Mr. Lehmann's introductions, and nearly allied to M. angulata.

H. Worthington, Esq., Whalley Range, Manchester, exhibited the handsome Cypripedium × Maudiæ (callosum Sanderæ × Lawrenceanum Hyeanum), and it is said that a First-class Certificate was awarded and subsequently withdrawn, because the flower had been fertilised, and therefore could not be spared for a painting to be made in accordance with the Society's rules.

J. Coleman, Esq., Gatton Park (gr. Mr. Bound), showed a small group, including Cymbidium Tracyanum, Dendrobium Phalænopsis, Oncidium tigrinum, Lycaste Skinneri alba, Lælio-cattleya × Henry Greenwood, the delicate Lælia præstans Gatton Park var., and L. p. gloriosa, the latter a large and richly coloured form to which an Award of Merit was given.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), showed a very fine spike of Dendrobium spectabile.

Mrs. Briggs-Bury, Bank House, Accrington (gr. Mr. Wilkinson), sent a

Cypripedium called Queen Margherita, said to have been imported with C. Charlesworthii, and somewhat resembling it, except that the petals and lip are pale green, and the dorsal sepal white, with a purple base.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), staged a fine group of cut spikes of Cattleya labiata and C. Dowiana, together with a light form of C. Warscewiczii having a broad white band along the centre of the segments.

Sir James Miller, Bart., Manderston, Duns, N.B. (gr. Mr. Hamilton), sent Cattleya × Miss Williams (Gaskelliana × Harrisoniana), and a superb form of Cattleya × Mrs. J. W. Whiteley (Bowringiana × Hardyana), having rich purple-rose flowers, with an orange disc to the lip.

D. M. Grimsdale, Esq., Kent Lodge, Uxbridge (gr. Mr. Hooker), showed a fine form of Odontoglossum Londesboroughianum.

Messrs. James Veitch & Sons, Chelsea, staged a splendid group, to which a Silver-gilt Flora Medal was given. It contained good examples of Cattleya labiata, C. Dowiana, numerous plants of the fine Lælia Perrinii hybrids, Lælio-cattleya × Decia, and L.-c. × Statteriana, the splendid L.-c. × callistoglossa, L.-c. × Wellsiana, L.-c. × Pallas, Cattleya × Mantinii, C. × Mrs. J. W. Whiteley, C. × Fascelis (bicolor ♀ × Aclandiæ ♂), also a hybrid between Cattleya bicolor and Lælia crispa, the handsome Cypripedium × Baron Schröder, and others.

Messrs. Charlesworth & Co.. Heaton, Bradford, sent a most distinct and beautiful hybrid called Cypripedium × Dora Crawshaw (bellatulum ♀ × Charlesworthii ♂), with a flower most like the former in shape, but mostly purple-rose in colour, and somewhat veined with a darker shade on the petals. It received a First-class Certificate.

Messrs. Hugh Low & Co., Bush Hill Park, staged a very brilliant little group, to which a Silver Banksian Medal was given. It contained some good examples of Cattleya labiata and C. Dowiana, a fine plant of C. × Maroni, C. Loddigesii albens, Oncidium Papilio, Lælio-cattleya × intermedio-flava, Odontoglossum crispum, and other good things.

Mr. Ed. Kromer, Roraima Nursery, Croydon, received an Award of Merit for Zygocolax × Veitchii Kromeri said to be a natural hybrid imported from Brazil, and thus particularly interesting, as the type was raised by Messrs. Veitch from Zygopetalum Veitchii ♀ and Colax jugosus ♂. The present form is of vigorous habit, and has green sepals and petals spotted with brown, and a white lip beautifully veined with purple.

Messrs. F. Sander & Co., St. Albans, exhibited a very pretty little group of hybrid Cypripediums and other Orchids, including Lælia × Gemma (crispa × Dayana), a pretty little plant, with rose-coloured sepals and petals, and the lip rich claret-purple in front with some white markings at the base.

Mr. James Douglas, Edenside Nurseries, Great Bookham, showed a plant of Lælio-cattleya × Gottoiana, artificially raised from Cattleya Warneri ♀ and Lælia tenebrosa ♂, thus confirming the supposed parentage of this handsome natural hybrid.

Mr. A. J. Keeling, Cottingley, Bingley, showed the pretty albino Pleione maculata alba.

At the meeting held on November 20th the display was even finer, and included a magnificent group of Cypripedium insigne from the collection of J. P. Morgan, Esq. The Orchid Committee was represented by H. J. Veitch, Esq., in the Chair, and Messrs. T. W. Bond, H. J. Chapman, De B. Crawshay, J. Douglas, J. G. Fowler, J. T. Gabriel, E. Hill, A. Hislop, J. Jaques, H. Little, F. J. Thorne, H. A. Tracy, R. B. Whitel W. H. White, W. H. Young, and J. O'Brien (Hon. Sec.).

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a most interesting little group, consisting of Lælio-cattleya × Dominiana inversa, a richly coloured flower, Cypripedium × Argo-Morganiæ, Cattleya labiata rosæflora, a curious form, the remarkable Masdevallia deorsa, with pendulous leaves, M. platyglossa, Sigmatostalix radicans, Polystachya Buchanani, and the five following species, to each of which a Botanica, Certificate was given:—Coryanthes Mastersiana, a rare and interesting plant, Maxillaria Mooreana, a small species of the grandiflora group, Cœlogyne fimbriata, Angræcum distichum, and Pleurothallis stenopetala, with cordate leaves and light green flowers.

H. S. Leon, Esq., Bletchley Park (gr. Mr. Hislop), received a First-class Certificate for Cattleya × H. S. Leon, obtained by intercrossing C. Schrœderæ eximia and C. Warscewiczii Sanderiana, a very handsome hybrid, with lilac-rose sepals and petals, and the lip rich purple-crimson with some light yellow on the sides of the throat.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent a very fine Cattleya × Mrs. J. W. Whiteley, C. Bowringiana concolor, Lælia pumila gigantea, Zygocolax × Amesiana, Cypripedium × Arthurianum pulchellum, and Lælio-cattleya × Mrs. Birkbeck (L.-c. × callistoglossa × L. purpurata), the latter a handsome form, with light rose sepals and petals, and the lip rich crimson purple with some yellow in the throat, to which an Award of Merit was given.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes), received an Award of Merit for Cypripedium × Cobbiæ (C. × Chas. Canham × J. Howes), a handsome hybrid, having the dorsal sepal green, lined with purple and broadly bordered with white. He also exhibited C. insigne Harefield Hall var.

J. P. Morgan, Esq., Dover House, Roehampton (gr. Mr. McLeod),

exhibited a fine series of specimen plants of Cypripedium insigne, arranged with foilage plants in a group extending throughout one of the long tables, and to which a Silver Flora Medal was given.

Mrs. Briggs-Bury, Bank House, Accrington, sent Cattleya labiata alba, and a remarkable inflorescence of Odontoglossum × Denisonæ in which the flowers on the upper and lower halves of the spike were markedly dissimilar.

Mrs. Haywood, Woodhatch, Reigate (gr. Mr. Salter), showed Cypripedium × bingleyense (insigne × Charlesworthii).

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), sent Lælio-cattleya × intermedio-flava.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), exhibited Oncidium × Mantinii Crawshayanum, a fine form of the natural hybrid between O. Marshallianum and O. Forbesii.

J. F. Ebner, Esq., Woodlands, Beckenham, (gr. Mr. Waite), showed a few good Cypripediums.

J. T. Gabriel, Esq., Streatham Hill, (gr. Mr. Ransom), showed a good Cattleya Dowiana.

F. Knight, Esq., Thundersley House, Thundersley (gr. Mr. Marston), staged a neat little group, containing some well-flowered examples of Cattleya labiata, Dendrobium Phalænopsis, some good forms of Cypripedium Charlesworthii, &c.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed two good forms of Dendrobium Phalænopsis.

Mrs. Temple, Leyswood, Groombridge, (gr. Mr. Bristowe), showed a pretty light form of Lycaste Skinneri.

Messrs. James Veitch & Sons, Chelsea, received a Silver Flora Medal for a very fine group, including Lælio-cattleya × Labiena (C. Trianæ ♀ × L. crispa ♂), resembling a fine L.-c. × exoniensis, L.-c. × Tiresias (C. Bowringiana × L.-c. × elegans), L.-c. × Frederick Boyle, Cattleya × Pandora (bicolor × Trianæ), C. × Portia, C. × Chloris, and most of the hybrids of Lælia Perrinii and Cattleya Bowringiana mentioned in the report of the previous meeting. We noted also three forms of Lælia × Mrs. M. Gratrix, the handsome Oncidium × Mantinii superbum, Epidendrum × Wallisio-ciliare, Cypripedium × Zethus (insigne Chantini ♀ × Charlesworthii ♂), C. × Memnon (Spicerianum ♀ × Charlesworthii ♂), C. × Actens superbum, C. × Leeanum Prospero, and other good things. A First-class Certificate was awarded to C. × Priam (insigne Chantini ♀ × Niobe ♂), a handsome hybrid, with the dorsal sepal white, green at the base, and spotted with purple on either side of the purple middle line, and the petals more or less tinged with coppery brown.

Messrs. Hugh Low & Co., Bush Hill Park, staged a choice little group,

containing Cypripedium insigne Sanderæ. C. i. Ernesti, C. i. Sanderianum, C. i. Balliæ, C. × Nandii, and other good hybrids, the handsome Lælia pumila gigantea, Cattleya Dowiana, &c., with a profusely flowered example of C. labiata in the centre. A Silver Banksian Medal was awarded.

Mr. James Douglas, Great Bookham, sent the pretty little Lælia Briseis and Lælio-cattleya × Gottoiana Mrs. Douglas (C. Warneri ♀ × L. tenebrosa ♂), a form with very light sepals and petals, to which an Award of Merit was given.

Messrs. F. Sander & Co., St. Albans, sent a fine example of Cymbidium Tracyanum

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, Buckingham Gate, Westminster, during December, on the 4th and 18th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on December 13th. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock, p.m.

We have received from Messrs. Charlesworth & Co., Heaton, Bradford, a flower of the beautiful hybrid Cypripedium × Dora Crawshaw, to which a First-class Certificate was given by the Royal Horticultural Society on November 6th last. Its parents are C.bellatulum ♀ and C. Charlesworthii ♂, and the flower most resembles the former in shape and the latter in colour. The dorsal sepal is of a nearly uniform clear rose-purple shade, much darker than in C. Charlesworthii, and the broad petals are also very richly coloured, but more strongly reticulated and without the distinct rosy shade, while the staminode, though much enlarged, shows some of the porcelain white of C. Charlesworthii. It is very beautiful, and one of the most marked advances in colour in the group that we have seen.

A remarkable flower of Odontoglossum × crispo-Harryanum is sent from the collection of T. Baxter, Esq., of Morecambe, by Mr. Roberts. It has four sepals, four petals, two lips placed side by side, and a broad double column with two anthers. It is from the plant to which a First-class Certificate was given by the Manchester Orchid Society on January 11th, 1900, and is finely developed and very beautiful.

A flower of O. crispum Ruby, which gained an Award of Merit at Manchester on October 23rd last, is also sent from the same collection. It

has very broad sepals and petals, the petals being suffused with light rose, and the sepals still darker, while the lip, which is rather small, bears one large dark blotch. A series of nine lighter forms of O. crispum are also sent, all being of good shape, and showing the usual range of variation in colour and amount of spotting. They form a charming little group.

We have received from Mr James Douglas, Edenside, Great Bookham, a flower of the pretty little Lælia × Briseis, raised by him from L. harpophylla and L. purpurata. It is a very pretty little hybrid with cream-yellow flowers and some light purple markings on the lip.

A particularly fine and richly coloured flower of Lælia autumnalis atrorubens is sent from the collection of R. W. Rickards, Esq., The Priory, Usk, Monmouthshire. It is one of a spike of eight flowers, and is cut from a plant which has been grown on from a piece imported five years ago, flowering every year, and this time bearing two spikes. It has received the usual treatment recommended for Mexican Lælias until this year, when, as an experiment, it was placed with Cattleya labiata, thus receiving a certain amount of shade. Last year, with others, it was grown outside during the very hot weather from June to the early part of August. Mr. Rickards remarks that the plant is sometimes reported as difficult to keep in health.

A very good form of Odontoglossum × Andersonianum with very broad segments is also sent from the same collection, which is nearer to the original type than many of the more recent ones. Mr. Rickards remarks that he has a good many nearly as good, but none quite equal to it.

A fine flower of Cypripedium Tracyanum Crawshayanum is sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. The markings of the sepals and petals are very dark, almost dusky brown, and it is one of the darkest forms that we have seen. The plant bears two fine spikes of sixteen and thirteen flowers.

We are glad to hear that the seedling Odontoglossums in the collection of E. F. Clarke, Esq., of Teignmouth, mentioned on page 276, are still thriving. Mr. Clarke states that the cross was O. madrense ♀ × O. crispum ♂. We hope that they will steadily progress up to the flowering stage.

ORCHID PORTRAITS.

Cattleya Gaskelliana var. amabilis. — *Lindenia*, t. 720. Var. Reine des Belges.—*Lindenia*, t. 716.

Cattleya × Mantinii.—*Amer. Gard.*, xxi., pp. 744, 745, 747, fig. 158, 159.

CORYANTHES MACRANTHA.—*Gard. Chron.*, 1900, xxviii., p. 355, fig 111.

CYMBIDIUM PARISHII, Rchb. f.—*Lindenia*, t. 717.

CYNORCHIS (a new).—*Garden*, 1900, lviii., p. 375, with fig.

CYPRIPEDIUM × BORCHGRAVEANUM.—*Lindenia*, t. 705.

CYPRIPEDIUM × DORA CRAWSHAW.—*Journ. Hort.*, 1900, xli., p. 437, fig. 117; *Gard. Chron.*, 1900, xxviii., p. 375, fig. 117.

CYPRIPEDIUM GUTTATUM, Sw.—*Bot. Mag.*, t. 7746.

CYPRIPEDIUM × VIDOR.—*Journ. Hort.*, 1900. xli., p. 393, fig. 108.

DENDROBIUM INÆQUALE, Rolfe.—*Bot. Mag.*, t. 7745.

DENDROBIUM PHALÆNOPSIS SCHRŒDERIANUM.—*Garden*, 1900, lviii., p. 368, with fig.

LÆLIA GRANDIS VAR. PELARGONIIFLORA. — *Lindenia*, t. 719. VAR. TENEBROSA SUBVAR. LINDENI.—*Lindenia*, t. 713. These are varieties of Lælia tenebrosa, not of L. grandis.

LÆLIA × NIGRESCENS.—*Amer. Gard.*, xxi., p. 709, with fig.

LÆLIO-CATTLEYA × BLETCHLEYENSIS.—*Amer. Gard.*, xxi., p. 709, with figs. (front and side views).

LÆLIO-CATTLEYA × C. G. ROEBLING.—*Amer. Gard.*, xxi., p. 709, with fig.

MILTONIA CUNEATA, Lindl.—*Lindenia*, t. 714.

MORMODES OBERLANDERIANUM, Lehm. & Kränzl.—*Gard. Chron.*, 1900, xxviii., pp. 317, 318, fig. 96.

PAPHIOPEDILUM CHAMBERLAINIANUM.—*Rev. Hort. Belge*, 1900, p. 253, with plate.

SOBRALIA XANTHOLEUCA VAR. ALBA.—*Lindenia*, t. 718.

SOPHROCATTLEYA × EXIMIA.—*Journ. Hort.*, 1900, xli., p. 373, fig. 103.

SOPHROLÆLIA × EROS.—*Gard. Mag.*, 1900, p. 706, with fig.

STANHOPEA AMESIANA.—*Journ. Hort.*, 1900, xli., p. 415, fig. 113.

STANHOPEA EBURNEA.—*Garden*, 1900, lviii., p. 381, with fig.

VANDA AMESIANA.—*Journ. Hort.*, 1900, xli., p. 459, fig. 121.

VANDA CŒRULESCENS REGNIERI.—*Rev. Hort.*, 1900, p. 634, with plate.

CORRESPONDENCE. &c.

(*Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily*).

H. J. R. Bulbophyllum Pervillei and Eulophia sp. not identified.

F. S. Cattlega Harrisoniana.

E. W. Good typical forms of Cattleya labiata.

Photographs received with thanks. A.W.

Several matters unavoidably stand over until next month.

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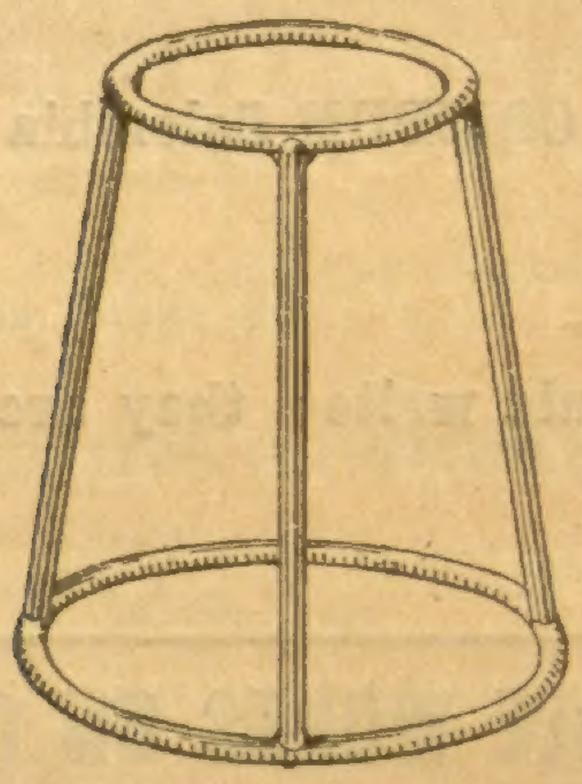

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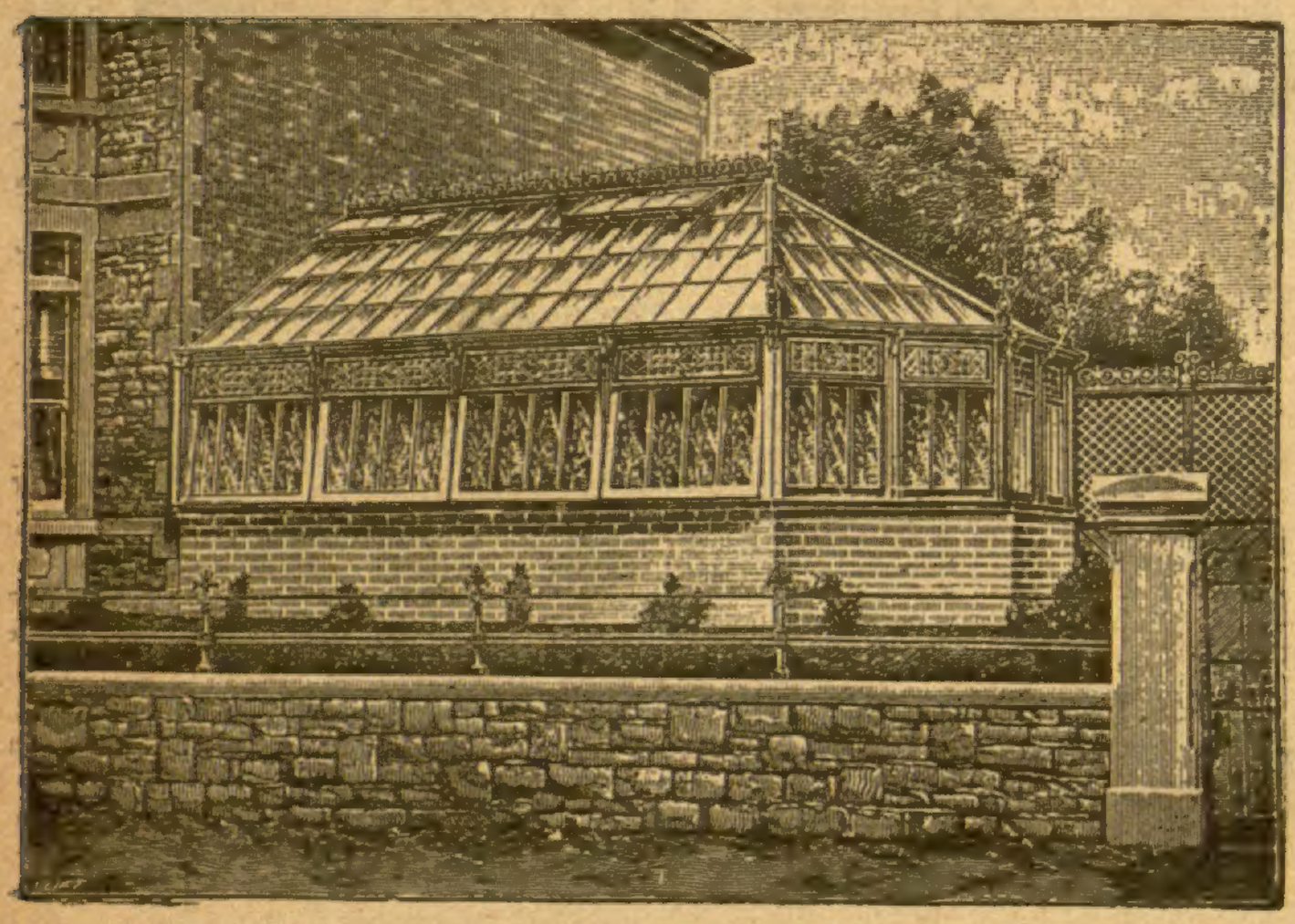

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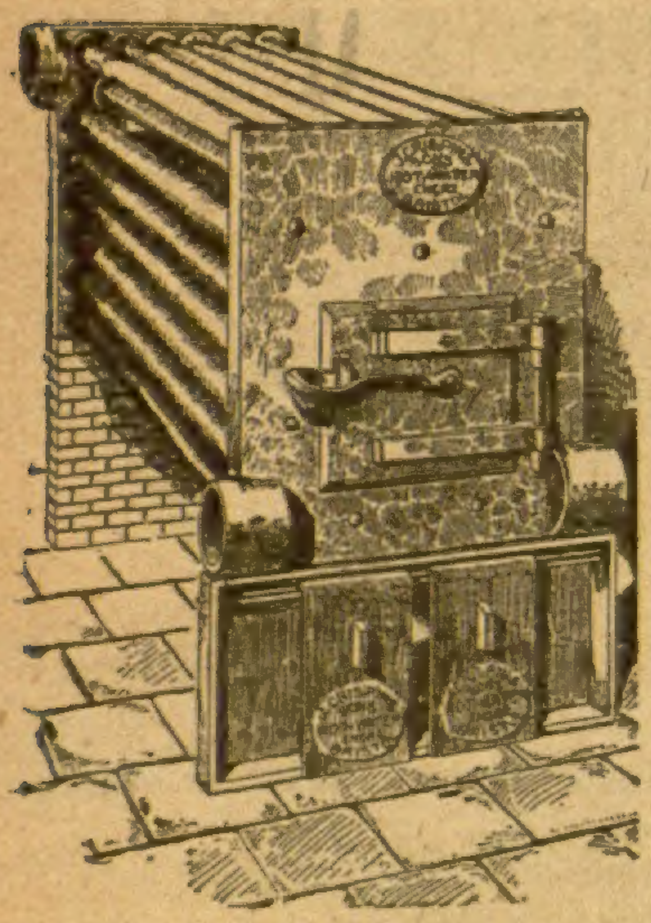

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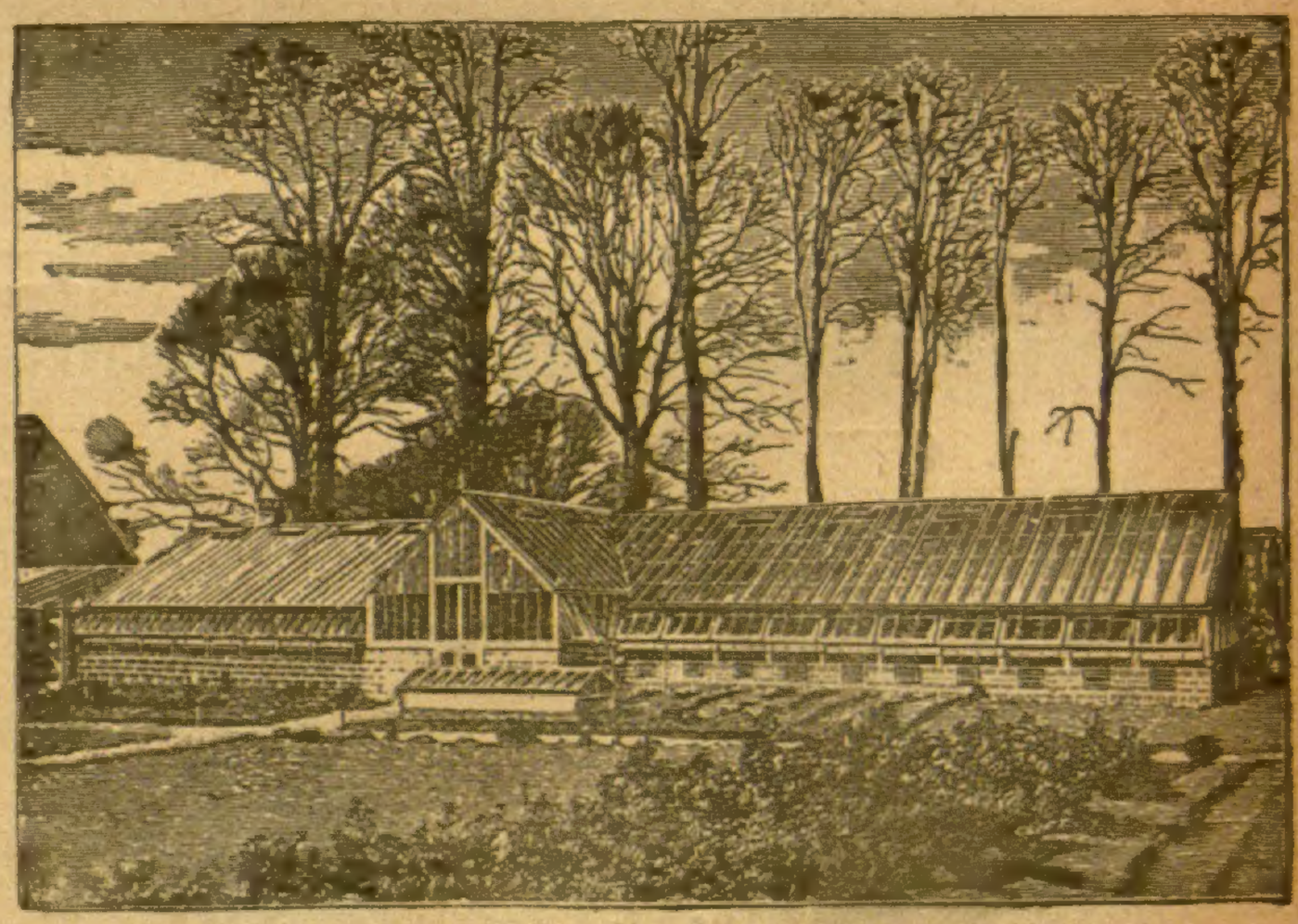

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